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ORIGINAL ARTICLES.

A STUDY OF THE CLIMATE OF COLORADO AS APPLIED TO THE ARREST AND CURE OF PULMONARY DISEASE.[1]

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IN the presentation of this subject I shall not attempt to argue the question of the advantages of a high altitude over those of a low, nor to extol the virtues of a cool climate as opposed to a warm, nor yet to praise dryness as contrasted with moisture. I shall accept the fact that the climate of Colorado is characterized by elevation and dryness, and it is essentially a cool climate, and on that basis will it be my endeavor to describe its several qualities, faithfully and impartially; to be eyes and ears for the reader, to be the observer in his stead, and, in so far as I am able, not only to state its good qualities, but its bad, so that I may be free from the charge, so often laid at our door, of being *ex-parte* in our writings, and of at least suppressing the truth even if we make no misstatements.

In selecting this subject for presentation, I am aware that I may lay myself open to the charge of offering nothing new; but so convinced am I of the merits of the Colorado climate, so many cures have I seen wrought in it, during my eight years of experience, and so efficacious do I believe it to be in the arrest or cure of pulmonary disease—in many of its forms—that I cannot refrain from adding my voice to those who are proclaiming its virtues, until, by sounding its praise so long and so loud, we may compel the world to hear.

"What do we mean by climate?" is the very pertinent question which Dr. Burney Yeo asks at the opening of his work on that subject; and he answers it by saying: "We generally mean by a question of this kind that we desire to know how the natural conditions and surroundings of a particular place affect the life and well-being of its human inhabitants." These conditions are the nature of its atmosphere, or aërial cloak, and the nature of its surface.

Let me speak of the latter condition first. The State of Colorado embraces a territory between seven meridians east and west, and four parallels north and south—that is, it is 380 miles long and 280 broad, having an area of 103,925 square miles, a superficies which is considerably more than double that of the State of New York, thirteen times that of Massachusetts, and twice that of England. The southern border of this tract corresponds in distance from the equator to Old Point Comfort, while its northern border equals Yonkers on the Hudson. Its most densely inhabited portion, however, corresponds very nearly to the space between Fredericksburg on the south and Philadelphia on the north, while its principal city (Denver) has the latitude of Baltimore in this country, or of Lisbon in the old world.

It is evident that in speaking of a climate of so vast a tract of country one can only mention the prevailing characteristics, and that considerable allowance must be made for deviations from that which is accepted as the standard. Through the centre of Colorado, running north and south, the Rocky Mountain range extends, its water-shed on the east emptying into the Mississippi River, by means of two small tributaries, the south branch of the South Platte in the north and the Arkansas in the south, streams which can easily be forded, and in summer time are so shallow, especially the Platte, that one can wade them without wetting the knee. The flow from the western water-shed is into the Pacific, through the Colorado River, while to the south a small portion of the State drains into the Gulf of Mexico by means of the Rio Grande.

I have spoken of these points because I wish to emphasize the fact that the drainage of the melting snow, from the 280, or over, miles of mountain-sides, whose waters flow to the east, is mostly subterranean, and that the surface is dry, affording a very slight amount of water. This factor is of most importance as contributing to the dryness of the climate, a condition which is due in a large measure to the distance which separates the State from any large body of water. Within the portion of Colorado lying to the east of the mountains, that portion most frequented by invalids, there are no large bodies of water from which the air can take up moisture, and a distance of over 900 miles from the Gulf, the nearest large body of water, is an additional cause for the exceeding dryness of the air of this State. Atmospheric dryness, due largely to geographical position, is one characteristic of the climate of Colorado. Of course, this condition is also affected by

[1] Read before the American Climatological Association, Washington, 1888.

atmospheric pressure, elevation, and temperature; but in the main it is due, as I have said, to geographical position.

But of almost equal importance, as has been ably shown by the researches of Bowditch and Buchanan, is the question of soil dryness. Here, again, the conditions are most favorable. To the east of the mountains, the portion of the State most inhabited, the land falls in a gradual descent from an elevation of about 6000 feet at the foot-hills, to one of about 3500 feet at the eastern border of the State, some 190 miles distant. Its surface is well drained into the two rivers I have mentioned, whose waters come principally from the mountain-sides, and, as a fact, most of these waters sink into the porous and thirsty soil to increase the subterranean flow, or to well up again as they near the mouth of the streams. Besides this natural drainage, favoring soil dryness, there are the additional features of a sandy and porous soil, which absorbs moisture rapidly, the absence of shade to retain it, and the further absence of precipitation to make it moist, as I shall have occasion to show further on in this paper.

Another property possessed by this climate due to the nature of its position is elevation. This varies from 3500 feet at the eastern border of the State, to 4500 feet at Pueblo, 5200 feet at Denver, 6000 feet at Colorado Springs, 7200 feet at Idaho Springs, 8000 feet at Georgetown, and 10,000 feet at Leadville. So that it is possible, within these limits, to give a patient any degree of elevation that may seem desirable.

Further than that, local configuration varies so that one can have his choice of open plain or of mountain valley. He can have the winter on dry ground at Colorado Springs, Denver, and numerous other places; or he can enjoy what Dr. Frankland and others place so much stress upon, in considering Davos Platz—that is, the solar radiation intensified by radiation from the snow in valley and on peak, such as occurs in narrow valleys amongst the mountains. The large area of the State admits of great variety of location, which can be taken advantage of by the invalid, and which our physicians are now studying and learning more closely. The common characteristics, due to surface and position, are: elevation, soil, and atmospheric dryness, rarefied air, an absence of shade, and a temperate clime, varied somewhat from the main characteristic by conditions induced by rarefaction of the air, absence of atmospheric moisture, and a sandy soil.

Let us turn now to a consideration of the atmospheric conditions prevalent in Colorado. Here, again, I shall give the prevalent and main characteristics, and I take the privilege of presenting those conditions that exist at Denver, for the reason that it is the centre of the State, as regards its population, and nearly so as regards its geographical position. It is the capital, the best known place in the State, and, further, meteorological records have been kept in it for the last dozen years.

The facts that I shall now proceed to give, I have taken largely from these records; I shall refrain, however, from giving tables, because they are wearisome, and must refer you to the writings on this subject

"The chief conditions of the atmosphere," says Yeo, "that affect the climate of a place, are these: (1) its temperature; (2) its movements (winds); (3) its amount of aqueous vapor; (4) its electrical conditions; (5) its purity; and (6) its density or pressure."

Dr. Frankland, in his article—"A Great American Winter Sanitarium for the American Continent," states as the qualities of climate existing at Davos Platz, which he regards so desirable: (1) great elevation above sea-level; (2) a continuous and, during winter, permanent snow-covering; (3) a minimum of watery vapor in the air; (4) a clear sun; (5) a clear atmosphere, free from zymotic germs, dust, and fog; (6) a sheltered position favorable for receiving both the direct and reflected solar rays. These views are sanctioned by Hermann Weber, Lindsay, Yeo, Tucker Wise, and others. Some places emphasize upon the presence of ozone; but as so little is known positively about ozone and about electrical conditions of the atmosphere, I think that we may dispense with any consideration of them, simply expressing the belief that whatever advantages come from their presence are common to Colorado with other high altitude resorts.

Taking, then, the gauge of the climate as set down by these eminent authorities, let me show to what extent they exist in Colorado, and how they are considered to be beneficial.

Elevation, or diminished atmospheric pressure, is presumed to induce a more rapid circulation, which may, in many cases, be beneficial by assisting the removal of the products of disease in the chest. On the other hand, in greatly enfeebled cases, it may so hasten metabolic change as to be highly injurious.

It also increases the number and depth of the respirations, a condition of affairs which is assumed by many to be due to the fact that the diminished oxygen in the rarefied air causes a so-called "starvation of oxygen," which requires a hastening of the respirations to supply the deficiency—a theory which Dr. Hermann Weber pooh-poohs, and which seems but little susceptible of mathematical demonstration. The increase in the number of pulse-beats and of the respirations, I think, tends to regulate itself after a residence in high altitudes. Authorities agree, however, that chest expansion does occur, and this may be beneficial as calling into play unused, or but feebly used, portions of the lung.

Beneke has shown that heat is lost from the selfsame apparatus more slowly on the tops of moun-

tains than at the seashore, a fact which Frankland emphasizes with reference to the sensation of cold, when he says, "The air, if still, feels warmer at an elevated station than in the lower and denser regions of the atmosphere, in consequence of the slower abstraction of heat from the body."

Hermann Weber speaks of the fact, that at elevated regions blood flows to the surface of the skin, that it thus becomes better nourished, that internal organs become unloaded, and that the elimination of carbonic acid from the blood of the lungs is facilitated.

Whatever benefits come to the human economy from a residence at high altitude, and I have mentioned some that are presumed to accrue, they are to be gained by living in Colorado, where the elevation of the inhabited portion of the State ranges from 3500 to 10,000 feet.

Humidity.—This element is highly variable in mountain resorts; it depends on the character and direction of the prevailing wind, and on the local configuration; the tendency, however, is toward dryness rather than humidity. I have already shown how the geographical position and configuration of the surface of Colorado tend to the production of atmospheric dryness; of course, the rarefaction of the air aids in the same direction. But now let me state the facts:

The average mean relative humidity for a series of years I have calculated to be only 45.8 per cent. of saturation, as against 69 per cent. in Jacksonville, Florida; 70.2 per cent. in New York; and 65.8 per cent. in Los Angeles, California. I have also shown, in a previous writing, that this mean is reduced to an average mean of 41.5 per cent. at noonday for the eight winter months of September to April inclusive, and that it not infrequently sinks to 25 per cent. of saturation; a condition that in Switzerland would endanger the production of the Föhn.[1] If, instead of relative humidity we speak of absolute humidity—*i. e.*, the number of grains of vapor contained in a cubic foot of air—the showing is immensely in favor of Colorado, inasmuch as rare air at a given temperature will hold less moisture than a denser air at the same temperature. The mean absolute humidity for Denver for a series of years was only 1.81 grains of vapor, as against 5.38 grains at Jacksonville; 3.02 at New York; and 3.77 at Los Angeles.

All authors attest the value of dry air in the arrest or care of pulmonary disease, and the influence of moisture in its production. A patient in search of a dry air cannot do better anywhere in the United States than to come to Colorado.

Sunshine.—It is in this particular that the Colorado climate is particularly strong. Figures show that, according to the signal service method of reckoning cloudy days, there are only 46 such in a year in Denver, as against 87 in Jacksonville; 109 in New York; and 51 in Los Angeles. This, however, takes into consideration the whole twenty-four hours. If we approach the subject in another way, with reference to the ability of a patient to be out-of-doors during the daytime, we may take as a gauge what occurred in the winter of 1884–85, considering the months of September to April inclusive, in which time I find that there were only eleven days, out of two hundred and forty-two, which were cloudy all day long—that is, when the sun did not shine at all from 9 A.M. to 5 P.M.

Certainly a counting of three hundred and twenty days of clear or fair weather in a year, when the whole twenty-four hours is considered; or of two hundred and thirty-one days out of two hundred and forty-two days, taking the hours from 9 A.M. to 5 P.M., is a tremendous showing of the extent of sunshine that occurs in Colorado,

But this is not all. The principal resorts lying, as they do, on the edge of the plains, and not being sheltered by mountains, enjoy a number of hours of sunshine a day such as few mountain resorts can boast. A comparison will make this clearer. Dr. Tucker Wise has stated that on the first day of January the number of hours between sunrise and sunset in the Alpine resorts are as follows:

	Hours.	Minutes.
Maloja	7	10
Wiesen	6	10
Pontresina	6	40
St. Moritz	5	5
Davos Platz	4	57
Andermatt	3	30

By way of comparison I introduce Denver, nine hours and seven minutes, or nearly twice that of the world-renowned Davos.

Not only does Denver enjoy so many hours of sunshine, but there is the additional consideration that the sun is up, warming the air, a number of hours before the invalid gets out-of-doors, while at Davos and other Alpine resorts the sun and the invalid make their appearance together. The following figures of sunrise will show this; Maloja, 9.25 A.M.; Wiesen, 10.35; Pontresina, 8.30; St. Moritz, 10; Davos Platz, 10.03; Andermatt, 11.45; Denver, 7.30, for the first day of January.

Knowing the warming influence of solar radiation, the part that these early hours of sunshine play in making the air comfortable for the invalid cannot be overestimated. It is like having a fire built in a cold room an hour or two before a patient arises, or having it lighted just as he tumbles out of bed.

One more influence of sunshine, and I will then proceed to other topics. The mental influence, the cheer which bright sunshine, clear, warm air, and a dry soil give to a life out-of-doors, thereby *inviting*

[1] A humid south wind on the Swiss lakes.

and not forcing the invalid to a drive, a walk, a ride, a game of tennis, and to all healthful out-of-door influences. I cannot lay too much stress upon this factor of Colorado sunshine—an important, if not the most important, feature of our climate. I would like to touch on it from the more poetic side, telling of the color it gives to daily life, but I must hasten to other considerations.

Temperature.—The question of the temperature of the Colorado climate is one of the most difficult to treat, because it involves a consideration of the difference between day and night, between the sun and the shade, between mountain and plain, between month and month. Broadly speaking, the days of the summer months are uncomfortably hot, in the cities, but even then the nights are cool, generally requiring that one be covered with a blanket, so as to be comfortable.

There is no denying the fact that Denver and even Colorado Springs were intolerably hot this past summer. Even admitting this, the advocates of this climate can respond that the invalid should go to the mountains, where in Extes Park, Manitou Park, Georgetown, Poncha Springs, Twin Lakes, and other places, he can breathe the purest air and have comfort. But the main consideration is one of the winter months, say from September to April inclusive. Here, again, I must admit many of the adverse criticisms made in regard to our climate. One writer, hunting the records over, for years, accuses us of having a diurnal change of eighty degrees in twenty-four hours, and he was correct, such a variance does occur—occasionally.

The meteorological conditions producing this change involve so well known a principle that it scarcely seems worth while to discuss them. Land radiates heat more rapidly than water, it becomes heated and loses its heat much sooner than water; and a dry, sandy soil will do this more rapidly than a moist. Shade and vegetation hinder both processes, so that the absence of shade favors both the heating and the cooling process. A rare, dry air favors the transmission of solar heat, by robbing it of but little of its intensity, and it also aids and abets terrestrial radiation.

These, then, are the conditions existing in Colorado: a dry, sandy soil; a lack of shade and vegetation; a rare, dry air. The result is a rapid warming up under the influence of the sun; a rapid cooling when that influence is removed. Hence we do have warm temperatures by day, and cool temperatures by night, and the difference does, at rare times, amount to eighty degrees. But, for the purposes of an invalid, the warmth and not the cold should be considered, because the latter comes at night when the invalid should be housed and can regulate the temperature, while the former is at mid-day when he is getting his exercise out-of-doors. A temperature of 62° at noon is of more importance to him than one of minus 18° at midnight. But Colorado climate is, in winter, a cool climate. The monthly mean for

January, 1886, at 1 P.M. was . . .	27.3°
February, " " " " . . .	48.0°
March, " " " " . . .	41.1°
April, " " " " . . .	52.3°
May, " " " " . . .	74.3°
June, " " " " . . .	75.1°
July, " " " " . . .	85.2°
August, " " " " . . .	81.5°
September, " " " " . . .	72.0°
October, " " " " . . .	64.2°
November, " " " " . . .	41.3°
December, " " " " . . .	45.5°

This is the temperature of the air at the time of day when an invalid is most likely to be out of doors. If these means seem too cold to the student of climate, I can only urge in extenuation: (1) To quote from Dr. Hermann Weber: "It is only a remnant of our old prejudice which can make us afraid of dry, calm, moderate cold;" or (2) as pointed out by Dr. Frankland, and as every person who has had experience knows, that "the air, if still, feels warmer at an elevated station than in the lower and denser regions of the atmosphere;" and (3) that the solar radiation must be taken into consideration, which transforms, to one in the sunshine, the air temperature from one of 27.3° F. at noon in January, to 92.5°; or the air temperature of 45.5°, in December, to the heat in the sun's rays of 100.2°.

No one, I think, need be apprehensive of cold days in Colorado, unless he be so much impoverished in physical condition as to make him an unfit subject for our climate. In most cases the inhalation of dry, cold air stimulates the respiratory functions to greater activity, leading, as Dr. Weber asserts, to greater expansion of the lungs and thorax, to improvement of the appetite and nutrition, thus exercising a beneficial influence on the course of phthisis.

Winds.—Statistics show that the average daily movement of the air in Denver is 145 miles as against 238 miles in Boston, 207 in New York, and 159 in Jacksonville; the data further prove that at 9 A.M. the average hourly velocity is 6.7 miles during the eight months, September to April inclusive, 8 miles at 1 P.M., and 8.6 miles at 5 P.M. Despite this low average, we are constantly accused of having high winds, and of the dust and sand storms being so disagreeable as to be detrimental to an invalid. With a view of meeting this criticism I collected data, awhile ago, which showed that in the year 1886 there were only twenty-three days in which there occurred a wind of eighteen miles or over, at two consecutive observations of the three 9 A.M. and 1 and 5 P.M., and that there were about an equal number of times when there was a wind of equal

velocity at only one of these three observations. Now, a wind of eighteen miles velocity is not a high wind. It is less than double the average velocity of the air in Boston, and is not more than a stiff breeze.

We do have occasional high winds, and they occur more frequently in some places than in others, but we are not entitled to the reproach so frequently hurled at us, that the winds and dust storms spoil the climate. The truth is, that owing to the sandy character of the soil and the absence of snow covering, a wind of moderate velocity will lick up the dust and set it a flying, while a stronger wind, as of eighteen miles per hour, will set up what is called a dust storm. These are no more disagreeable than I have witnessed on Commonwealth Avenue, in Boston, many and many a time. From the nature of things they are more frequent in the narrow streets of Denver than in the open country, or in the health resorts, and are in no way to be ranked with the cyclones of Kansas, or even with the gentle and moderate breezes of the peaceful Connecticut Valley, which I have known to blow over bridges and tear up hundreds of elm trees by the roots.

These dust storms are disagreeable, principally so in Denver, where the streets are the natural soil, which becomes dried by the ardent rays of the sun and pulverized by travel, so that they have to be constantly watered, even in January and February. But the frequency and violence of these storms have been very much overstated, and they do not seriously impair the invalid's comfort, or keep him indoors much of the time.

Precipitation.—The average yearly fall of rain and snow (melted) is 14.77 inches as against 55.94 in Jacksonville; 49.47 in Boston; 42.7 in New York; and 18.97 in Los Angeles, and of these 14.77 inches the greater part falls in the spring and summer months. Snow does not lie upon the ground in winter, and when it falls it is rapidly licked up by the dry breezes or drunk up by the porous soil.

Drs. Frankland and Weber consider a snow covering in winter of advantage because it keeps down germs, and also because, by reflecting the sun's rays, it increases the solar radiation. The former reason may be a valid one, but is it not counterbalanced by the deleterious effects of the thaw and by the decomposition and decay that are then induced? Is it not also more than counterbalanced by the disadvantage that a heavy covering of snow and ice is to the invalid who wants to drive, ride, play tennis, walk, climb, and lead an out-of-door life from nine o'clock in the morning until five o'clock at night? We in Colorado think so, and we prefer free and untrammelled locomotion on dry soil, even though there may be a few germs afloat, to wet feet, cold, hampered exercise, thaw, and everything that must follow up the existence of a deep snow covering.

As regards solar radiation, I have previously shown that while the mean average in the Maloja for November, December, January, and February was 103.75°, that in Denver it was 99.75° for the same time, a difference of four degrees in favor of snow covering, but not of material difference when one considers the actual temperature. If an invalid is not comfortably warm in a sun temperature of 99.75°, it is to be doubted very much whether 103.75° will warm his thinned blood.

Fogs.—Almost unknown. In the winter of 1884-1885 there is not a record of a single fog from the 1st of September to the 1st of May.

Purity of the Air.—I have left a consideration of this factor to the very end, because I wish to bring out certain points in connection with it. Generally speaking, every one acknowledges the purity of mountain and of sea air. We are in the habit of saying that it contains more ozone—a factor of which we do not know much. Basing our ideas upon the investigations of Pasteur, Tyndall, and Miquel, we say it is aseptic, free from germs, and we place the limit of germ-life at elevations ranging from 5000 to 7000 feet. I wish to raise the question whether we are right in so doing, and whether this principle may not be varied by other influences, so that instead of being taught to believe that altitude, in itself, is a germicide, we shall not rather believe with Hermann Weber, "That wherever a large number of human beings, especially invalids, congregate, there the purity of the air is likely to be impaired."

That there is germ-life in the air of Denver and of towns in Colorado I am assured. Urine decomposes nearly as readily in these places as in Boston, and if one wishes to be sure that the casts are not eaten up by little vibrioles, he must make his microscopic investigation early, just as he would in the East. Moreover, I have seen dead cattle lying on dry ground in Colorado, at varying elevations, subject to the drying effect of the sun's rays, which would desiccate, shrink up, and fall to pieces; and I have seen other dead cattle, at equal elevations, lying where there was some moisture, from which a most noisome stench would emanate. Certainly we do have decomposition at all elevations in Colorado, and that means putrefaction and, consequently, germ-life.

Where there is an absence of putrefaction in our climate, it seems to be due to the dryness of the air rather than the absence of germ-life. But even admitting the presence of germs, it does not militate against the purity of the Colorado air, for whatever qualities belong to mountain air certainly can be found in the air of our Rocky Mountains, whose sides are studded with towns up to an elevation of 11,000 feet, and whose summits tower into the skies at 14,000 feet,

It has often been said that different animals seem

to possess different degrees of sensitiveness to the rare air of mountainous regions, and that the cat cannot exist at great elevations. This assertion, with others, should be subject to modification, for I know of one cat that lived for ten years at an elevation of 11,000 feet, and in Leadville, 10,000 feet, they are not at all absent.

Résumé.—These, then, are the general characteristics of the Colorado climate: (1) elevation; (2) dry air; (3) a large amount of sunshine; (4) a warm sun temperature; (5) a somewhat variable temperature, cool, not cold, in winter—cold during a winter's night but comfortable at mid-day; (6) a moderate motion of the air, with occasional high winds; (7) a small snow- and rain-fall; (8) the absence of fogs; (9) a pure air; (10) a dry, sandy, well-drained soil.

But the simple narration of these climatic conditions in no way rounds out a just description of the arrest of consumption as applied in the Colorado climate. It does not tell of the local conditions of the different resorts; of the out-of-door life; of the diet and exercise; of the home life; of ranch life; in fact, of the various local conditions and of the means adopted to aid recovery, many of them varying from those employed elsewhere.

A description of this side of the subject furnishes too large a field to be handled by me at the present time, and in their individual application to the various cases of consumption they should be left entirely in the hands of a competent physician residing in that climate. One feature cannot be too strongly emphasized as characteristic of the Colorado cure. It is an all-year-round resort and not simply a winter resort, and, further, our State is an active, growing community, and there is plenty of room for the energies of the most active, when once a recovery is secured, so that a return to old methods and haunts is not to be recommended.

The State now claims a population of over 350,000 inhabitants. How many of these have come for reasons of health it would be difficult to say. Every town and every city has its large percentage of such people, who, in their persons and in the energy of their lives, are the strongest testimony that can be given to the efficacy of the Colorado climate in the arrest and cure of pulmonary disease.

HYPERPLASIA OF THE LYMPHATIC TISSUE OF THE PHARYNX AND NASO-PHARYNX.[1]

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THE important group of diseases embraced in the title of this paper are of the utmost interest to the general practitioner, and, although they have been known for some time, experience has taught me that they are often overlooked, or mistaken for other affections.

Before entering upon the pathology and the clinical features, I desire to offer a few remarks upon the anatomy of our subject. The lymphatic tissue in question is embedded in the mucous membrane of the pharynx and naso-pharynx, either as a uniform, well-defined infiltration, or as so-called follicles, also named adenoid tissue by Hiss, and it appears under three forms. We have a simple, diffuse infiltration of the connective tissue with lymph-cells, further denser foci extending over a larger area—for instance, Peyer's glands of the intestines; and, finally, a circumscribed form, which is known under the name of tonsil. The lymphatic tissue appears in the locality which interests us in this paper, in an aggregated as well as disseminated form, and is distributed uninterruptedly throughout the pharynx and naso-pharynx. Waldeyer gave it very appropriately the name of lymphatic ring of the pharynx. Its position is almost vertical, and beginning at the naso-pharynx with the pharyngeal or Luschka's tonsil, it extends to the orifice of the Eustachian tube, where we have a larger aggregation of follicles, the tubal tonsil. Turning downward along the posterior edge of the soft palate, and around the posterior pillar, it reaches the faucial tonsil, and returns across the base of the tongue in a similar manner, to the naso-pharynx.

The abnormal conditions which we have to consider occur almost exclusively in localities where the tissue appears in the aggregated form, the tonsils, and its diseases, as a rule, have either an inflammatory or hyperplastic character. It is only the latter we will treat of to-day, and as the process, occurring in different parts of the pharynx, presents different symptoms and requires different treatment, each affection has to be considered separately. In order not to extend my paper unduly, I have selected the three regions where hypertrophy is most frequently observed, viz., the naso-pharynx, with the pharyngeal tonsil; the pharynx, with the faucial tonsils; and the lymphatic tissue at the base of the tongue, also called lingual tonsil. I shall only dwell at some length on the pharyngeal and lingual tonsils, and but briefly consider the hypertrophy of the faucial tonsil, so familiar to all practitioners.

Hypertrophy of the pharyngeal tonsil, as well as adenoid vegetations of the naso-pharynx, which latter name is given to these growths in children by their discoverer, William Meyer, of Copenhagen, are far more frequent than is generally assumed. It has been my good fortune to meet with an unusually large number of such cases since my return to the city, in September, and I preserved the specimens removed within the last three months, which I beg to hand you herewith. Quite a number of cases were brought to my office, in which treatment had

[1] Read before the New York County Medical Association, December 17, 1888.

been instituted for hypertrophic tonsils, or nasal catarrh; of course, without the desired result.

Regarding the age of patients, cases have been reported in which symptoms of the disease had been noticed from birth; but the children coming under observation are generally two years and older, the largest number being between five and fifteen years of age. With increasing age, the liability to the disease decreases proportionately. Sex does not seem to exert a special influence, the number of male and female patients being about equal.

In the majority of cases we observe one or more of the following symptoms: catarrh, alteration of the voice, impediment of respiration, affections of the ear. Although there are cases without catarrhal symptoms, most patients have more or less secretion of mucus either in the nose or the pharynx, and, in some instances, this is the chief reason for seeking medical advice. When hypersecretion was present, I found it oftener in the nasal cavities in children, whilst adults complained more of an abnormal sensation of mucus in the pharynx. But there are undoubtedly a considerable number of patients whose nostrils are perfectly free from discharge, and present no anomaly whatsoever.

Alteration of voice, and still more the changed character of the respiration, are the symptoms most apt to attract the attention of the parents to the fact that their child is unwell, and requires treatment. The voice has lost its resonance, is muffled, is called "dead voice" by William Meyer. Children as well as grown people speak with a nasal twang, and the nasal sounds are imperfectly pronounced. Instead of *m* and *b* they will say *n* and *d*. The voice is similar to that observed in paralysis of the soft palate, the functions of which are often interfered with when the vegetations are very abundant.

The impediment in respiration is generally the first symptom observed by the relatives of the patient, and, at the same time, the most important one. It does not require a very large development of these growths, especially in the small naso-pharynx of children, to make nasal respiration difficult or altogether impossible, and the patient becomes a mouth-breather. I shall not here dwell in detail on the function of the nose as an organ of respiration—for instance, for warming, moistening, purifying the air—I shall only speak about the more important features noticeable in our little patients.

To begin with the nursing infant. When the child takes its mother's breast, it has its mouth closed and breathes through the nose. If this is impossible, nursing is frequently interrupted to allow breathing, the child becomes fretful, and not receiving sufficient nourishment, his physical development seriously suffers. Furthermore, children with adenoid vegetations have restless, agitated sleep, they snore, the respiration is labored, stops occasionally altogether for a short time, the child becomes partly awake, only to begin the same turn over again as soon as asleep. These symptoms are so distressing that instances have been reported in which, after successful removal of the vegetations, parents were for several nights in a state of anxiety, owing to the absence of the familiar and accustomed noise and snoring.

This mode of respiration in time also exerts deleterious influence on the configuration of the chest and face. The chest-walls remain flat, are consolidated in the lower portion, corresponding to the insertion of the diaphragm, which attempts to overcome the impediment of respiration by energetic contractions. This condition, known and described for some time past as due to hypertrophy of the faucial tonsils, is just as often brought on by adenoid vegetations. The imperfect aëration and decarbonization of the blood make the child pale and anæmic. Such children are languid, their mental development is often retarded, they are bad scholars and slow in perception. Mouth-breathing of many years changes the aspect of the face. The open mouth, the protruding teeth of the upper maxilla, the disappearance of the naso-labial folds give the face a stupid expression.

A large number of our patients suffer from affections of the ear—according to Hartman, seventy-four per cent.—and all degrees of aural disease, from slight deficiency of hearing to purulent otitis, come under observation. Sometimes the aural trouble is only functional, without pathological changes, and is then caused by the pressure of the vegetations against the Eustachian tube, and consequent closing of the latter. I have treated several cases of hard breathing, in which the ear was sound and the treatment exclusively confined to the disease of the naso-pharynx, with the desired result.

According to Schaefer, 19 out of 100 cases of adenoid vegetations are complicated with hypertrophy of the faucial tonsils, and it thus happens that the symptoms are often attributed to the latter, and the disease of the naso-pharynx is overlooked. A limited number of patients complain of supra-orbital neuralgia. Headache, asthma, and also enuresis have been reported cured after removal of the vegetations.

The diagnosis is not so difficult as it would seem at the first glance, although a satisfactory rhinoscopical examination is out of the question in very young children. The best, easiest, and quickest way to ascertain the condition of the naso-pharynx is the introduction of the finger behind the soft palate. Whoever has touched these soft, velvety, mushroom-like growths, will always recognize them again. Although a mistake is scarcely possible, it is advisable to familiarize one's self with the sensation the finger experiences when introduced into a normal pharynx, in order to accomplish the examination in a safe and quick manner.

The treatment is highly satisfactory, as after destruction of the vegetations they are not apt to grow again. Topical treatment with iodine solutions, caustics, etc., having proven too tedious and ineffective, surgical proceedings have been generally adopted. Some surgeons operate by pushing ring-knives through the nose into the naso-pharynx, but the majority prefer to operate by introducing either curettes, sharp spoons, or the post-nasal forceps through the mouth. The latter instrument has been subjected to many modifications, and is now in general use. It is best to remove as much of the growth as possible at one sitting, and to assure ourselves by rhinoscopic or digital examination of the result of the operation. There is no objection to the use of ether in the operation, and, in fact, some operators always employ it. I generally succeed without ether, and only in rare instances have been obliged to introduce the forceps more than twice, or, at the most, three times. Too harsh and rough operating may be followed by fever and general malaise, also purulent otitis; but I, myself, have never experienced an untoward after-effect, except once, an accident which, to my knowledge, has not been reported by others. The patient, a lady eighteen years old, had a broad-seated hypertrophy, the larger portion of which was removed at the first sitting. A second operation was performed four days later to remove the remaining basis, and was accomplished without great difficulty. After her arrival home she was seized with a most violent hemorrhage, which recurring again the next day, necessitated the plugging of the naso-pharynx. The patient made a complete recovery.

After operation the patients should remain at home for a day or two, and when there is free discharge from the wound-surface, detergent and disinfectant solutions can be sprayed or injected into the naso-pharynx and nose.

The second part of our subject, the hypertrophy of the faucial tonsils, is so well known that I shall confine my remarks to two points only, viz., hemorrhage after tonsillotomy, and the use of the galvano-cautery.

Excision of the tonsil is always followed by a slight loss of blood, sometimes by a serious, even dangerous hemorrhage. In a very large number of tonsillotomies in my practice, all of which were performed with Tiemann's tonsillotome, three copious hemorrhages occurred. In the first two cases I was present when the bleeding took place; the third patient was already far away from my office when the bleeding began, and he had to call in the services of another physician. The history of the three cases is briefly as follows:

CASE I.—A strong, healthy woman called in the afternoon at the German Dispensary and complained of throat trouble, which, on inspection, was found due to a hypertrophic tonsil. Except a slight hyperæmic condition of the fauces, nothing abnormal could be seen, and the excision was easily performed, followed by the usual slight bleeding. Toward evening I was called in great haste by her husband, who informed me that his wife had been bleeding ever since her arrival home from the dispensary. When I reached the patient, I attempted first to remove the coagulated blood, in order to find the bleeding vessel, if possible. During the procedure the woman fainted, and whilst being carried to a lounge, began to throw up blood in quantities I had only seen in pulmonary hemorrhage. Not to lose any more precious time, I inserted my index finger into the pharynx, and by using and continuing for ten minutes pressure against the tonsil and counter-pressure from the outside, effectually arrested the hemorrhage.

The second case was similar to the previous one, except that the bleeding began immediately after excision of the tonsil.

CASE II.—The patient, a lady of about twenty years of age, was operated upon at the New York Polyclinic, by one of my assistants, in my presence, and the means employed to stop the hemorrhage were the same as in the preceding case.

CASE III.—The third patient was a physician, on whom I operated in my office, and who left me after the first slight loss of blood had stopped, without any untoward symptom. When I saw him again, a week later, he related to me the following: On his way home he began to spit blood, and thereupon entered a drug-store, for the purpose of applying hæmostatics. Unable to control the bleeding, he went to the office of a medical friend, who, after several prolonged and fruitless efforts to stop the hemorrhage, finally took him to one of our hospitals, where it ceased after the patient was put to bed. It took him several days to overcome the ill-effect he had sustained from the loss of blood.

If I were asked, Have we positive signs by which we can determine if a tonsillotomy is likely to be followed by a hemorrhage, or not? I must say, we have not. But I have profited by my experience, and, although not slow in employing the knife, and preferring tonsillotomy to all other destructive means, I have, in two instances, flatly refused to operate. The two patients had hyperæmic, angry, red-looking tonsils, much more so than the first patient, whose history I have just related. The tonsils were not in an acute state of inflammation, but there was decidedly chronic enlargement. In both instances I dreaded hemorrhage so much that I did not practise excision. In other cases we may receive the warning of a possible hemorrhage during the operation. When the instrument cuts through the tissue with difficulty, finds much resistance, or when we hear or feel a grating sound, we may be prepared for a subsequent hemorrhage. The connective tissue, in such cases, is either so prolific and dense, or interspersed with minute calcareous deposits, that the cut

bloodvessels cannot retract and collapse, but are kept open by the unyielding, hard tissue. I may add, that I never saw alarming hemorrhage follow tonsillotomy in children.

The employment of the galvano-cautery as a means of reducing enlarged tonsils has, of late years, gained much favor amongst the profession. Quite a number of surgeons prefer it to the cutting operation, on account of dread of hemorrhage, but in a certain class of cases it is, so to say, the only means to the desired result, leaving out of consideration caustics, like chromic acid, Vienna or London paste, etc. In inflammatory processes of the tonsils the diseased organ often forms adhesions with the anterior pillar of the fauces, which then covers the tonsil, either hiding it entirely from view, or letting only so small a part protrude beyond it that it is impossible to grasp it with any cutting instrument without injuring the pillar. Here the use of the galvano-cautery is in place, and very few sittings (from five to ten) are sufficient to bring on the necessary reduction in tonsils of large size. The platinum point is immersed either into a crypt, or into the mass of the tonsil itself, and several days have to elapse before the reaction has subsided, the slough comes off, and a second application can be made. The instruments required are either a fine cautery-knife, or a pointed platinum electrode, and any good cautery battery.

The third and last subject of my paper, the hypertrophy of the lingual tonsil, has only of late years been more fully investigated. As I read an essay on this subject a year ago,[1] I shall only dwell on the more important points, and add a few observations made since that time.

The locality where we have to look for the lymphatic tissue is at the very base of the tongue, in the glosso-epiglottic fossa. The affection we treat of is not a hypertrophy of the circumvallate papillæ, which were erroneously by some writers regarded as the seat and source of the disease. The lymphatic tissue is situated back of and below the papillæ, which may be hidden and covered by the growth, if it is very prolific, but which are not themselves diseased.

The hypertrophy is, contrary to adenoid vegetations and enlarged faucial tonsils, generally seen in adults, and most easily discovered by the laryngeal mirror. If the growth is excessive, it comes in contact with the epiglottis, sometimes overlapping its free edge and seriously interfering with its free movements.

The chief symptoms we notice in such patients are as follows:

1. The sensation of a foreign body, or of pressure in the throat. Everything imagination can think of, patients believe to be lodged in their throats. To remove this sensation, frequent attempts at deglutition are made, the so-called empty swallowing, whilst there exists no actual interference with the partaking of food. Some cases of globus hystericus find their explanation in the presence of hypertrophic glands.

2. Interference with speech and singing voice. When the enlarged tissue comes in contact with or impinges on the epiglottis, the latter is exposed to friction, and greater exertion is required to produce a sound. The natural consequence is, that patients easily become hoarse, or that their voice is weak, breaks down often and suddenly, and loses its clearness.

3. The lymphatic follicles sometimes become diseased in a like manner as we see in follicular tonsillitis, when the patients experience actual pain.

4. Some writers have observed radiating pains between the shoulder-blades, in the larynx, trachea, etc. One of my patients had shooting pains on each side of the throat, extending toward the ear.

5. Cough is a very frequent and important symptom. It is either a violent, almost incessant, or a spasmodic cough. Especially the latter often gives rise to great anxiety on the part of the patient or his relatives, on account of the fear of pulmonary disease. It is probably due to the friction of the epiglottis and the tongue against each other during their movements.

6. A few cases of asthma have been reported cured by destruction of the hypertrophic follicles.

The above six symptoms were enumerated in my essay of last year. To these we must add two more, which I had occasion to observe since that time, viz., slight bleeding and formation of an abscess. The bleeding occurred in a woman who complained of a harassing cough disturbing her night's rest, and of bloody sputa during the last three months. Examination revealed enormously hypertrophied follicles impinging upon the epiglottis, and minute extravasations of blood at the tip of some of the most prominent follicular glands. The formation of an abscess in a large mass of follicular tissue was seen in a man who expectorated a small teaspoonful of pus tinged with blood, every four to six weeks during the preceding year. Before this event took place, he felt a fulness and slight soreness in his throat, interfering with deglutition, which symptoms immediately ceased afterward. Inspection, which took place one day after the discharge, showed a ragged, irregular condition of the lymphatic tissue, and one large mass on the right side of the base of the tongue, which had formed adhesions with the lingual surface of the epiglottis. Drops of pus exuded from the top of this mass, and, when the galvano-cautery was applied, the electrode could be seen to enter a small cavity.

The treatment of this affection consists in the destruction of the redundant tissue. If small and

[1] Medical Record, December 17, 1887.

soft, applications of Lugol's solution in different strengths may suffice; if larger and denser, stronger caustics are required—for instance, chromic acid, Vienna paste, etc. The best remedy is the galvano-cautery, which is applied in a similar manner as in hypertrophic tonsils. If there is a lobular mass present, which can be engaged in a snare, I am in the habit of using my irido-platinum cautery snare. The wire used with this snare is an alloy of iridium and platinum, having more elasticity and resiliency than platinum alone, and resembling steel wire. It was originally designed for the removal of posterior turbinated hypertrophies of the nose, as described in the *Medical Record*, March 17, 1887, but I found it also very useful for many other purposes, especially in cases in which the softness and flexibility of the platinum wire render operations difficult—for instance, the removal of mucous polypi in the nasal cavities, of anterior turbinated hypertrophies, pedunculated growths in any cavity, etc.

In conclusion, I would state that I have endeavored to present a series of pathological conditions interesting alike to the general practitioner and specialist, and I hope that I may have succeeded in bringing forth all the practical points in a practical manner.

OPERATIVE PROCEDURES IN HYPERTROPHY OF THE PROSTATE.[1]

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CURATIVE measures in hypertrophy of the prostate received but little attention by the older masters of surgery. It was looked upon as a natural sequence of age, and by many regarded as a conservative effort of nature to avoid stillicidium.

Mercier, to whom we are indebted more than to any other surgeon for directing attention to this trouble, commenced his studies of the subject in 1836, and published his *Researches* in 1841. Based upon the fact,—to which he was the first to give prominence,—that a large proportion of cases of obstruction of urine from hypertrophied prostate was due to median enlargement, he instituted his operation of punching an artificial urethra through this median obstruction; but it was not until within the present decade that his labors and operation were generally known. Dr. J. W. S. Gouley, after visiting France, where he met Mercier, introduced his operation into the United States as late as 1878, and he is the only one, so far as I am aware, who has performed it in this country.

These *Researches* of Mercier, and a knowledge of the fact that he had relieved over four hundred cases by his operation, without serious results, a few fortuitous instances in perineal and suprapubic lithotomy, with accompanying enlarged prostates, in which the median bar had been divided, or intravesical pedunculated outgrowths removed incidentally, opened up to the minds of surgeons hope of relief, even in the advanced stages of hypertrophy of the prostate; and the last decade has witnessed a decided advance in the treatment of this former opprobrium of medical science.

Retention of urine being a prominent feature of hypertrophy of the prostate, it was natural that relief should be sought in the line of retention from strictures of the urethra, which had long been familiar to surgeons. Hence the first efforts at relief were in *punctures* of the bladder, which had for their object only relief of the retention, and did not aim at permanent relief. These were made (1) by the canula or aspirating needle into the bladder above the pubis, (2) by the rectum, or (3) through the gland itself, and (4) suprapubic incision and puncture.

The first two need only to be mentioned as they aimed only at temporary relief.

Puncture through the gland itself.—Mr. Reginald Harrison, at the British Medical Association, Liverpool, 1883, said:

"I tapped the bladder from the perineum through the enlarged prostate, quite independent of the course of the urethra. A canula was retained in this position for two months, with great comfort to the patient. He was eighty years old, but completely recovered and lived for several years; and in this I include the acquisition of the natural and unaided use of his bladder" (*Medical Record*, January 21, 1888).

This is similar to the forced catheterism practised by John Hunter and Sir Everard Home, but "abandoned as uncertain and dangerous."

Mr. Harrison himself, speaking of this method of puncture, before the British Medical Association in August 1885, says:

"I must admit that, following the practice of Syme and to some extent of Edward Clark, I have decided preference for an incision through the perineum on the twofold ground of safety and comfort" (THE MEDICAL NEWS, August 18, 1883).

Suprapubic incision and puncture.—Sir Henry Thompson, in a communication to the Royal Medical and Surgical Society (*British Medical Journal*, June, 1879), suggested an opening into the bladder by suprapubic incision and puncture. He thus describes the method:

"A curved hollow sound being introduced into the bladder, the point was made to project against the wall of the organ just behind the symphysis. A small incision being then made, the end of the staff was sought with the finger and the bladder carefully punctured; care being taken not to make the incision too large so as to avoid the escape of urine by the side of the tube to be introduced. A gum-elastic tube, having a shield

[1] Read before the Southern Surgical and Gynecological Association.

like that of a tracheotomy tube, was then passed into the end of the sound, and thus introduced into the bladder."

Mr. Harrison, in speaking of the different methods of puncture of the bladder for the relief of retention, in the Lettsomian Lectures, before the Medical Society of London, January, 1888, says:

"Excellent in design as these proceedings are, they appear to me to fall short in an important respect—in not dealing with the cause of the obstruction. Two of these measures (suprapubic and per rectum) are open to objection on the ground that these artificial canals are inconveniently placed as permanent vents, for it would seem desirable that the urethra should, as far as possible, be utilized, and the external opening for the escape of the urine be dependent" (*Medical Record*, January 11, 1888).

But none of these methods of puncture is now in favor. The surgery of the present day demands more permanent relief by removal of the cause.

The Mercier operation.—The pioneer in the more radical processes was Mercier, of Paris. He was the first to recognize fully the important fact that a large proportion of cases of obstruction to the passage of the urine in these cases was due to an obstructing bar or enlargement of the median portion near the neck of the bladder, often without any serious enlargement of the lateral lobes. With this fact in view, he devised his operation of punching through this obstructing bar a channel, or artificial urethra. The operation was performed by an instrument resembling a fenestrated lithotrite. The beaks of the blade were shorter, and the curve more abrupt, as in the Mercier curve of the Benas gum catheter. The edges of the male blade were smooth instead of striated, as in the lithotrite, so that in passing through the fenestrum of the female blade it made a clean-cut channel through the obstructing bar, which was held between the beaks. "The operation, despite the fact," as we are informed by Dr. Gouley (*Lancet*, July 17, 1880), "that its originator had performed it upward of four hundred times with excellent success, and without the occurrence of abundant, much less fatal, hemorrhage, has not been looked upon with confidence." This, no doubt, arises from the difficulty of nice differentiation in the character of cases, and the conservative spirit of the past, which tends to delay operative interference in these cases as long as possible. The operation is suited only to those cases (for which it was designed by its inventor) in which the obstruction is from a bar or band at the neck of the bladder, and "should be limited in these," says Dr. Gouley (*Amer. Surg. Assoc.*, 1885), "to cases in which the obstructing bar is not exceeding one-half or three-quarters of an inch in thickness."

Dr. Gouley has somewhat modified Mercier's instrument. In an article read before the Surgical Association, 1885, he thus describes his modification:

"On account of the difficulty which I have experienced with Mercier's prostatectome in surmounting from behind forward the urethro-vesical obstruction with the male blade, I devised a prostatectome, of which the following is a brief description. The instrument resembles an ordinary modern lithotrite. It consists of a male and female blade, the one sliding into the other. The male blade is hollow, its sides are vertical, and its superior portion a little rounded. It is welded to a tubular shaft, in the centre of which is a long needle worked by a button at the proximal extremity of the handle. The object of the needle is to transfix the prostatic valvule or tumor, and hold it in position from the moment it is seized till it is cut and extracted. The beak is hollow to receive the piece of valvule."—*Gaillard's Journal*, July, 1885.

The principal advantage this instrument has over that of Mercier's is in the angle of the beak with the blades. In Gouley's instrument it is less abrupt (Mercier's being almost rectangular), and thus passes over the obstructions with greater ease. It is also lighter, and the needle adds an additional safety in retaining and extracting the incised portion of the obstruction.

Bottini's operation.—Closely allied to Mercier's method of punching an artificial urethra is the method of Bottini, of Pavia, which he states he has followed for ten years (THE MEDICAL NEWS, Feb. 11, 1888). He formed an artificial urethra by means of a galvano-cautery. The operation has been termed thermo-galvanic prostatectomy. It consisted in producing an artificial urethra by means of galvanic cautery instead of the punching process of Mercier.

In one of the cases reported, a man of sixty-eight years was restored to complete health, with full functions of the bladder, in three months. In another — Dr. Musatti—the catheter was withdrawn on the fifth day, and the patient left his bed two days later. The result was great improvement in health, and micturition every five or six hours. Dr. Musatti declares the operation less painful than cauterization of the prostatic urethra with nitrate of silver. This may be used not only for the removal of the obstructing bar at the neck of the bladder, but also where the obstruction is from the enlarged lateral lobes. This gives it a wider range of application than the Mercier process. While it has features which recommend it in certain cases, it is not without danger, and has not been used in a sufficient number of cases to warrant its general introduction. It is better thought of in Italy and Germany, where it has been more often used than in this country.

Newman's method.—Dr. Robert Newman, of New York, claims to have used electrolysis, or thermo-galvanic absorption, with a good degree of success. The instrument consists of a smooth sound with a

fenestrum at its lower extremity. At the opening is a piece of platinum wire, in connection with a galvanic battery. The current is kept up only for a few seconds, and repeated at intervals of three to five days. This does not destroy the tissue, as in the process of Bottini, but only promotes absorption of the enlarged gland. It is devoid of danger, and may be used even in the earlier stages of the disease. The principle here is somewhat different from electrolysis in strictures. The absorbent action is brought to bear upon glandular instead of cicatricial tissue, and we may reasonably expect a better result than in strictures.

I may here refer to one other method of the use of galvanism. In my paper before the Alabama Surgical and Gynecological Society, last year, I said:

"Electrolysis by puncturing the gland itself by a suitable galvanic needle has not, so far as I am aware, been tried; but from the well-attested success of this method in other tumors, it would seem worthy of the attention of some bold innovator."

This method has been since then tried by Casper, of Berlin. At a recent meeting of the Berlin Medical Society he reported four cases treated in this manner. The needle was inserted in three points in the gland *per rectum*, and a current of from twelve to fifteen milliampères used for fifteen minutes, the needle being carefully insulated to prevent injury to the other parts. Two were much improved; in one the result was negative, and in the other there was injury from defective insulation of the needle (THE MEDICAL NEWS, June 16, 1888).

Perineal prostatotomy and prostatectomy.—Sir Henry Thompson had practised digital explorations of the bladder through perineal incisions for the removal of tumors of the bladder. This naturally led to perineal prostatotomy and prostatectomy, as by this route either the obstructing bar at the neck of the bladder could be incised, or the intravesical pedunculated outgrowth could be reached and removed with the scissors or the snare.

This was an advance upon the Mercier and Bottini operations, as it enabled the operator, by digital exploration, to make a more certain differentiation of the case; and at the same time relieve by free drainage the cystitis, which is an almost constant accompaniment of these cases.

Dr. Gouley seems to have been the first to recommend this method. In his *Diseases of the Urinary Organs* (1873), after describing the method of perineal incision for the relief of retention, under the head of "Ablation of Median Prostatic Outgrowths" he says:

"the surgeon should then endeavor to give permanent relief by a procedure which will probably not add greatly to the dangers of the preceding step. He should first explore the prostate through the artificial opening, and if he discover a median outgrowth, or isolated tumor, he should dilate the prostatic sinus, or incise the prostate laterally, and enucleate the tumors, or if there be a median outgrowth excise it; but the better plan is to remove it by means of a small wire écraseur."

Dr. Lardiner, of Leipsic, was led by an accidental seizure and removal of a pedunculated middle lobe in operating for stone, to this same method.

"At first the author was vexed with the unintentional interference with the prostate, but when he saw that good effects followed he was led to believe this was the proper treatment of this class of hypertrophied prostates. He afterward repeated the process, confining himself to the forceps in removing the pedunculated enlargements (*Annals of Surgery*, 1887, p. 433).

Reginald Harrison frequently used this method of perineal prostatotomy and prostatectomy, and preferred it to all others. He says:

"so far I have been able to do all I desired in the way of removing more or less of the obstructing prostate by proceeding from the perineum" (*Med. Record*, January, 1888).

Prostatectomy from the perineum has this advantage: It permits a direct digital exploration of the parts, and thus we are enabled to judge definitely whether the obstruction is from a band or bar at the neck of the bladder, an intra-vesical pedunculated outgrowth, or a general enlargement of the gland; and we may incise the first with the bistoury (Thompson and Harrison); the second may be seized with the forceps (Lardiner), or removed with the scissors (Harrison and Thompson), or seized with the galvano-snare (Gouley and Lang); and the third incised with the bistoury, and a drainage tube inserted (Gouley and Harrison).

Suprapubic prostatectomy.—The revival of suprapubic lithotomy, and the safety with which the bladder can be opened by suprapubic incision, suggested this as another method of relief in prostatic troubles. The operation consists in opening the bladder above the pubes in the usual manner and severing by snare, the scissors, or the forceps that part of the enlarged prostate which prevents the outflow of the urine. Dr. McGill has practised this method in three cases with the best result (THE MED. NEWS, December 10, 1887). In the *Med. Record*, September 23, 1888, there is a report of two cases treated by suprapubic incision, in which Dr. Atkinson removed the protruding enlargement by enucleation, after incision of the mucous membrane, having first removed a small pedunculated growth with the scissors.

Dr. Hunter McGuire, at the Congress of American Physicians and Surgeons (Washington, September, 1888), spoke of suprapubic cystotomy for the purpose of removing intravesical outgrowths

of the prostate, and described his method of leaving a permanent fistulous opening above the pubis as a means of keeping the bladder thoroughly emptied. In the case referred to, the patient was not only relieved of the troublesome cystitis, but acquired voluntary control of retention and expulsion of his urine.

Thus it is seen we have a variety of methods for relief. Each of them may have advantages, under certain conditions peculiar to itself, and by a careful differentiation of cases, and a prudent selection of the method suited to each case, we may hope to give relief, more or less permanent, in many cases heretofore abandoned as without hope.

What is now needed is an accurate differentiation of cases, a prudent selection of the process suited to each case, and judicious determination of *the time* when it may be proper to interfere by operative procedures.

Much has already been done in the line of differentiation. Mercier, to whom too much credit cannot be given, made a long stride in the right direction when he emphasized the fact, that to median obstruction, frequently without any serious enlargement of the lateral lobes, was due a large proportion of cases of obstructed urine; and his operation was wisely conceived for relief of this condition. He not only emphasized the existence of median obstruction, but by means of his rectangular, short-headed catheters and sounds, did much in determining the situation, form, and size of other obstructions, thus paving the way to a more accurate differentiation of cases.

The varieties may thus be classified:

(1) *General enlargement:*
  (*a*) Of one lateral lobe.
  (*b*) Of both lateral lobes.
(2) *Median obstruction:*
  (*a*) Sessile tumors.
  (*b*) Bar, or valvule at neck of bladder.
(3) *Intravesical outgrowths:*
  (*a*) Pedunculated outgrowths of median portion.
  (*b*) Prolongation of lateral lobes.

These varieties may occur separately and distinct, or they may be combined one with the other. General enlargement, while it may be the prominent characteristic, may be (and frequently is) accompanied by median obstructions—extra- or intra-vesical—or it may occur without these median complications; while upon the other hand, the median enlargement may be the main or sole trouble.

In the extra-vesical median, sessile enlargement, the submucous tumor is at some little distance from the urethro-vesical orifice and raises the connecting tissue (commissure) of the lateral lobes more obtusely, while in the bar, or valvule, the tumor being located nearer the vesico-urethral os, and from the absence of resistance, raises the mucous fold more acutely and near the neck of the bladder.

The intra-vesical varieties may be a prolongation of the lateral lobes, one or both, into the bladder; or the median portion may protrude into the viscus, as a pedunculated tumor.

For a wise application of the different methods of operation, we should, as near as possible, differentiate between these varieties, so as to select the operation suited to each variety.

(1) We may infer something from the clinical history of the case. If the patient is young (from 54 to 60) with decided obstruction, and no amount of effort will relieve the bladder, we would infer a median enlargement, with valvule at neck of bladder or a pedunculated intra-vesical outgrowth. If the obstruction has been very gradual in its approach, and the patient is still able at advanced age (seventy or more) to empty the bladder after patient effort, we may infer that the enlargement is general. This inference is the more certain if the patient has a stillicidium, or kind of siphonage of the urine, when the bladder becomes distended. This stillicidium is often present when the bladder is over-distended, and the fact of retention is overlooked.

(2) But our main reliance is upon physical examination. This is made per rectum or by the urethra. By careful digital examination, per rectum, we may determine the size, hardness or softness—smoothness or roughness—whether one or both lobes are enlarged, whether the enlargement is general, or whether there is an absence of general enlargement, and hence the inference that the obstruction is median or an intra-vesical outgrowth. If now with the sound or catheter (soft-gum catheter of Benas, with Mercier curve preferred) we find the constriction commences at the apex of the gland, and continues evenly until it enters the bladder; and if in *withdrawing* the catheter we find the *grasping* of the catheter continues steadily until it passes the apex, which it does with a kind of jump, we have full confirmation of the diagnosis of longitudinal or general enlargement.

But, in a general enlargement, there may be complications. In addition to the general enlargement we may have a sessile tumor, valvule, or intra-vesical pedunculated outgrowths, or extensions of the lateral lobes into the bladder. The sessile median enlargement combined with lateral general enlargement, may be detected by the increased resistance to the passage of the catheter or sound as we reach the portion of the urethra just before entering the bladder. This may be noticed either in introducing or withdrawing the catheter. The pedunculated intra-vesical outgrowths, and intra-vesical prolongation of

the lateral lobes whether existing with or without general enlargement, are to be determined by the Mercier rectangular sound, or by Dr. Gouley's cysto-pylometer. This instrument, which is a modification of Mercier's sound, is thus described by Dr. Gouley:

"The beak of the instrument is nearly rectangular and one inch in length. The shaft is in two longitudinal segments—the male segment sliding over the female and being flat at its vesical end to come in contact with the corresponding flat surface on the inner side of the beak of the female segment, and designed to grasp the valvule or bar."

The instrument when closed resembles a metallic sound with a short, rectangular curve. It is introduced closed and when in the bladder the beak is turned gently from right to left, and the reverse—noting carefully any resistance it may encounter. If it meets with firm, unyielding resistance on either side, we may infer intra-vesical enlargement of the lateral lobes; but if the resistance is yielding, and changes its relations to the handle of the instrument, we may infer that we have a pedunculated intra-vesical median outgrowth.

We may with a good degree of certainty distinguish between the sessile median enlargement and the crescentic valvule or bar, with the same instrument. The cysto-pylometer being introduced closed, into the bladder, and drawn outward until the beak rests against the intra-vesical orifice of the urethra, the male blade is carefully withdrawn. The amount of resistance by the median enlargement is estimated fairly well by the resistance met with in withdrawing this blade. After the resistance ceases, the male blade is gently carried toward the bladder again. If it is a sessile median enlargement, the blade will, with a continuous resistance, pass into the bladder; but on the other hand, if it is a valvular bar, the beak will be arrested by it, and the obstruction may be grasped between the beaks of the male and female blades, and its thickness estimated by the amount of separation of the blades, by the scale on the handle of the cysto-pylometer.

Electro-cystoscopic explorations, where the urethra will admit of the introduction of the instrument, may also be brought to our aid, and we may be able with this instrument to differentiate intra-vesical outgrowths of the prostate from intra-mural vesical tumors.

Thus by inquiry into the clinical history of the case, careful digital examination per rectum, exploration of the urethra and bladder by the catheter and the cysto-pylometer, we may gain a fair idea of the character and position of the obstruction. This being determined, we may then select the surgical process suited to the case.

If the obstruction is from a general enlargement of the gland, we may use the Bottini galvano-cautery; or galvano-absorption, as practised by Dr. Robert Newman; or perineal prostatotomy. If, upon the other hand, the examination shows a general enlargement, with intra-vesical outgrowths, we may resort to suprapubic prostatectomy combined with urethral prostatotomy by means of an instrument similar to the urethrotomes used in dividing strictures of the urethra; or perineal prostatotomy as practised by Mr. Harrison. Or in these complicated cases, we may use the method of McGuire, and instead of combining perineal or urethral prostatotomy with supra-pubic prostatectomy, be content with a supra-pubic fistula for the exit of the urine.

But if we determine that we have a median valvule or bar as the obstructing cause, the Mercier operation is plainly indicated. Or if the case is one of intra-vesical outgrowth with but little general enlargement, the supra-pubic operation is the method indicated.

Another factor of success in these cases, is the *time* at which surgical interference should be resorted to. The remark of Mr. Harrison, "that no operation should be thought of so long as the catheter can be introduced," should be modified. When we have at our command methods that may be used with safety in the earlier stages, when the cases are carefully differentiated, and relieve the patient of years of annoyance or suffering, I can see no good reason why we should not use them. And probably in this *timely interference* is where we may expect most in the relief of prostatic troubles. The conservative spirit which has guided our actions to the present, may be in danger of going too far, and leaving undone what might be well done. The early use of the process of Mercier, and the milder one of Newman, are well worthy of consideration upon properly selected cases, and the future will doubtless see them often resorted to before patients are worn out by long suffering, and reduced to the last extremity, when the system is badly prepared for any operation.

The operation of Bottini, too, with well-constructed instruments, would seem to be preferable to a life-long suffering or premature death. This operation, which has not been well received in this country, is better thought of in Italy and Germany. Nussbaum, while condemning almost all other forms of surgical relief, approves the galvano-caustic method of Bottini.

Even perineal and supra-pubic prostatectomy, in this day of improved surgical technique and antisepsis, may well be resorted to in the earlier periods, rather than an apathetic contemplation of a life of suffering, and the gradual and sure approach of a condition, in which, *as a last resort*, these measures are attempted with but little hope of success.

MEDICAL PROGRESS.

Treatment of Acute Coryza.—DR. FRANK HAMILTON POTTER, of Buffalo, recommends the following treatment for this affection:

If the cold comes on toward evening, a hot bath should be taken, followed by the exhibition of $\frac{1}{100}$ to $\frac{1}{60}$ of a grain of sulphate of atropia, and the patient well wrapped up in bed. A word of caution is necessary in regard to the use of the atropia. Some people are very susceptible to its influence, and when given for the first time a much smaller dose must be used—say $\frac{1}{250}$ to $\frac{1}{100}$ of a grain. When found to disagree, a full dose of the sulphate of quinine, about ten grains, may be substituted. During the next day the nose and upper part of throat should be thoroughly washed out with a warm alkaline spray; or, still better, with a douche, by means of the posterior nasal syringe; the turgescence of the nasal tissues contracted by means of cocaine; and, finally, the entire surface covered with a coating of an unirritating oil. The *oleum petrolina* he has found to be the best for this purpose. This should be done about three times in the course of the day. If the cold is first noticed in the morning, the process should be reversed; the local treatment given during the day and the general treatment at night. From experience he was able to report that, by this method, colds that generally last from ten days to two weeks can be limited to about two days. The discomfort after that is so very slight as not to be considered. He does not propose this as an infallible method, but where it fails it will usually be found that there is some intra-nasal chronic disease, or else some constitutional disorder which makes the attack of extraordinary obstinacy.

Lately, Dr. F. Cardone, of Naples, has contended for the parasitic nature of acute coryza, stating that its morbid process is analogous to that of pneumonia. He has found in the secretions the *streptococcus pyogenes*, the *staphylococcus aureus et albus*, and, in still greater numbers, the *diplococcus* of Fränkel and the *pneumococcus* of Friedländer. If he is correct, we can, perhaps, understand the great benefit resulting from the early and continued cleaning of the parts, such as the above treatment advocates. On the other hand, if a cold is caused by the paresis of the nerve-centres governing the vaso-motor phenomena of the upper air-tract, we can also understand how the counter-shock of the hot bath and atropia treatment, together with local depletion, so rapidly subdues the inflammatory action and restores the patient to accustomed health.—*Buffalo Medical and Surgical Journal*, January, 1889.

Employment of Iron in Diseases of Children.—DR. H. GILLET remarks that to the fourth or fifth year, one should guard against the use of medicaments and above all against the use of iron preparations. And yet two of these would form an exception, namely, the proto-iodide and the perchloride of iron. The first of these is, properly speaking, not an iron preparation, but rather an iodide, and is used in the treatment of scrofulous affections; the second is used in hemorrhages and in conditions of a generally grave nature, such as typhoid fever, diphtheria, etc.

Iron preparations, to be acceptable to children, must first have a pleasant taste; secondly, not derange the digestive functions; and thirdly, admit of being administered in small bulk. This last condition is easily attained, since the preparations in question act in very small doses.

Thus to a child from eight to ten years, one of the following powders given once a day, will be found to be sufficient:

℞.—Subcarbonate of iron,
Powdered rhubarb,
Sugar flavored with vanilla, } āā 2 grains.
Mix with some preserved fruit.

Iron preparations appear under two forms, soluble and insoluble. The insoluble in the powdered form as: the subcarbonate reduced, and saccharated carbonate of iron, etc., are easily mixed with any disguising substance. Pills being generally refused, they must either be administered in their natural state or in the form of chocolate tablets:

℞.—Reduced iron . . . . . 3 grains.
Chocolate . . . . . ʒx.

Make one tablet—administer during the day a quarter or a half a tablet according to age of child.

The soluble preparations are numerous; those to be preferred are the lactate, the citrate, the chloride, and the tartrate of iron and potassium. The lactate is less irritable to the stomach than the citrate and can be administered in wine or liquor as follows:

℞.—Citrate of iron . . . . . 30 grains.
Malaga wine . . . . . ʒiij.

One teaspoonful once or twice daily.

The perchloride, if it were stable, would have the preference over all other preparations, the syrup containing two grains of the iron, in ʒv of the syrup.

The chloride can be administered alone or as in the following formula:

℞.—Solution of chloride of iron . . ʒiss.
Spirits of ether . . . . . ʒiij.

Five to ten drops in sweetened water, to be taken through a tube.

The tartrate of iron and potassium can be administered in various ways:

℞.—Tartrate of iron and potassium
Cinnamon water . . . . } āā ʒj.
Simple syrup . . . . . ʒiv.

One to two teaspoonfuls three times daily.

Or,

℞.—Tartrate of iron and potassium . 30 grains.
Syrup of bitter orange-peel . . ʒij.
Muscatel wine . . . . . ʒviij.

A small wine-glassful after each meal.—*Revue Thérapeutique*, December 20, 1888.

The Operative Treatment of Hydrocele.—The last number of Professor Bruns's *Beiträge zur klinische Chirurgie* contains a paper on the "Operative Treatment of Hydrocele and its Ultimate Results," in which DR. HERTZBERG, of Tübingen, endeavors to prove the superiority of incision over injection by a record and analysis of forty-six cases,

in which Volkmann's radical operation was performed. The youngest patient was twelve years of age, and the oldest fifty-six years; in six cases the hydrocele affected both sides of the scrotum. The operation in each case was performed with full attention to antiseptic details. The vaginal cavity was washed out with a weak solution of corrosive sublimate; a drain-tube of medium size was passed through the cavity, and brought out through a counter-opening at the lower part of the scrotum, and the seat of operation and the surrounding parts were finally covered by a dry dressing of wood-wool. Professor Bruns practises partial excision of thickened indurated or superfluous tunica vaginalis, but holds that total excision of this membrane is not required, save in very exceptional cases. Care was taken to relieve the vaginal cavity of all products that were supposed to be associated with the disease, and in a case in which such morbid conditions existed, deposits and growths were removed from the tunica vaginalis, hydatid and other cystic growth from the testis or epididymis.

In thirty-three cases recovery took place without any signs of local or general reaction. In eight cases there was severe general reaction with subjective disorder and prolonged fever. Such conditions which, however, are now but very rarely observed, are the result of interference with primary healing by effusion of blood into the vaginal cavity, of inflammatory œdema of the scrotum, of swelling of the testis, or of suppuration in the perineum or the anterior abdominal wall. In a large majority of the cases collected by Hertzberg the drain-tube and sutures were removed on the fifth or sixth day, and the patient was able to leave his bed at the end of the first, or the beginning of the second week.

The average duration of the stay in hospital was a little over sixteen days. In this respect Volkmann's operation seems at first sight to compare unfavorably with injection of iodine. The usual duration of hospital treatment by the latter method is from eight to ten days, but, it is pointed out, injection is very often followed by tenderness and swelling of the scrotum and effusion into the vaginal cavity, which may last for weeks, and even for months.

All the patients treated by incision and drainage at Tübingen were discharged as cured, and the primary results were all very favorable. By subsequent inquiry and observation Hertzberg has made out that the benefits derived from the treatment have been maintained, and that forty-five out of forty-seven hydroceles treated by cutting operation have been permanently cured. By comparing tables, derived from different sources, of carefully recorded and long-observed cases of hydrocele treated by incision and injection, he finds that the relapses after the former treatment constitute from three to four per cent. of the total number of cases, whilst those after treatment by puncture and injection of iodine amount to eight per cent. In conclusion, Hertzberg expresses it as his opinion that incision is the most rational method of treating hydrocele, especially with regard to the certainty of obtaining a permanent cure, and that in future it will be more frequently practised, as the appreciation of the value of antiseptic surgery becomes more widely spread.—*London Medical Recorder*, Dec. 20, 1888.

Oil of Turpentine in Epistaxis.—Dr. Ernyei (*Pester Presse*, No. 14) treated a severe case of bleeding from the nose, which had resisted treatment with ice, ergotine, digitalis, etc., with tampons saturated with oil of turpentine, and had the satisfaction of stopping in a few minutes an epistaxis which had lasted eight days.—*Deutsche med. Wochenschrift*, December 13, 1888.

Cocaine in the Treatment of Whooping-cough.—To diminish the violence of whooping-cough, painting the pharynx and tonsils four times daily with the following mixture is recommended:

Chlorhydrate of cocaine . .	grs. xv.
Water	ʒ v.

—*Journal de Médecine*, December 16, 1888.

Three Cases of Railway Shock.—At a recent meeting of the Vienna "Medizinisches Doctoren-Collegium," Prof. Benedikt brought forward three patients who had suffered from different degrees of the so-called railway shock. The first of these patients, immediately after the accident, presented severe nervous symptoms, such as headache, giddiness, sickness, impaired mental faculties, etc. The two other patients became attacked with the nervous disturbances some time after the shock; one of them suffered from headache and giddiness, which hindered him from doing his regular work. It was not until three years later that his field of vision became impaired, first only for colors, and later on also for white light. At a later stage, examination with the ophthalmoscope proved the presence of neuro-retinitis. In the case of the third patient, a number of severe nervous symptoms supervened some time after the shock. The speech of the patient was scarcely intelligible, though the tongue was not paralyzed; but his faculties of recollection were impaired. Paraparesis with simultaneous augmentation of the reflexes came on, viz., ataxia hemilateralis, which was characterized by the fact that the patient invariably fell toward the right side when he shut his eyes. Prof. Benedikt remarked that in the recent cases of railway shock a number of subcutaneous injections with a two per cent. solution of carbolic acid, the application of the electrostatic method as well as a number of *points de feu*, could remove the nervous disturbances under consideration, and prevent those severe symptoms which were to be observed in the two last-mentioned patients.—*Medical Press*, December 19, 1888.

Treatment of Diarrhœas.—DR. RABOW states that lactic acid and talc, two of the best remedies for diarrhœas, are highly recommended by two well-known French physicians.

Lactic acid was first used with success by DR. HAYEM in the green diarrhœas of infants; the little patients receiving, every fifteen minutes, a teaspoonful of a two per cent. watery solution of this preparation. Later on Dr. Hayem tried the same remedy in the obstinate chronic diarrhœas of the adult, to whom he administered with the best results, three times daily, a tablespoonful of the following mixture:

℞.—Lactic acid	grs. xxx.
Water	ʒ iij.
Simple syrup	ʒ v.—M.

DR. SEVESTRE also administered a teaspoonful of this preparation, five or six times daily, without observing the slightest unfavorable symptoms. In the so-called bilious diarrhœa, lactic acid was found useless, only large doses

of bicarbonate of sodium acting effectively. Later on DRS. SÉZARY and AUNE tried the remedy in the diarrhœa of tuberculosis, administering thirty grains of the acid to a four ounce mixture, and if this did not prove active enough, ninety and one hundred and twenty grains to a four ounce mixture. This quantity was taken in tablespoonful doses within twenty-four hours. The evacuations were diminished in frequency, and became normal on the fourth day.

Another remedy has been recently recommended by DR. DEBOVE, namely, magnesium silicate, also known by the name of talc.

This preparation was given in large doses, producing the most favorable results, especially in the diarrhœa of tuberculosis.

Another valuable remedy is the acorn-cocoa as prepared by DR. MICHAELIS. Added to milk it forms a valuable nutriment, overcoming the diarrhœa of malassimilation. In the chronic diarrhœa of adults and children it must be mixed with water *only*.

In acute diarrhœas, cardamom seeds, a remedy which can be found in almost every household, have been used with advantage. Children as well as adults may chew the contents of one or two capsules.—*Therapeutische Monatshefte*, December, 1888.

The Cause of Death in Acute Pneumonia.—LIEBERMEISTER, in the course of a paper on a series of cases of acute croupous pneumonia, has expressed the view that death is generally due to pulmonary œdema of the non-infiltrated portions of the organ; this œdema he attributes to cardiac failure. The fever, he says, tends to produce degeneration of the heart muscle and functional insufficiency, while the heart has to act against an increased resistance, due to compression of the bloodvessels by the infiltrated lung; the right heart, acting under these unfavorable circumstances, fails, and the first symptom of its failure is the pulmonary œdema above mentioned. —*British Medical Journal*, December 29, 1888.

Cardiac Cyanosis.—DR. A. FALLOT publishes in the *Marseille Médicale* the results of his exhaustive researches upon cardiac cyanosis, from which the following conclusions are deduced:

1st. Clinicians have up to this date considered the precise diagnosis of the anatomical lesions of cyanosis an impossibility. From observations gathered he found that cyanosis in the adult is the result of a number of small cardiac malformations.

2d. Amongst these cardiac malformations is one which in frequency surpasses all others, it having been found in no less than seventy-four per cent. of our cases; this is the one which the clinician should diagnosticate, and having done so, his chances of future errors will be limited.

3d. This malformation constitutes a true anatomical pathological type represented by the following four conditions: 1st. Narrowing of the pulmonary artery. 2d. Interventricular communication. 3d. Deviation of the orgin of the aorta to the right. 4th. Hypertrophy, nearly always concentric, of the right ventricle.

4th. To attribute cardiac cyanosis to the persistence of the foramen ovale, would be in open opposition to the immense majority of facts observed; the communication of two small foramina, existing alone, without any other cardiac lesion, does not produce cyanosis.—*Revue de Thérapeutique*, December 15, 1888.

Convenient Formulas for the Administration of Creasote.—DR. KEFERSTEIN (*Th. Mtsch.*, 1888, No. 9) gives some very good formulas for the administration of creasote. The one at first recommended by Dr. Bouchardat, and later on by Dr. Fräntzel, has been modified by the author, as follows:

℞.—Creasote . . . . . gr. xx.
Alcohol . . . . . ʒvj.
Cinnamon water . . . . ʒiij.
Cinnamon syrup . . . . ʒvj.—M.
One teaspoonful three times daily.

For the pill-form the following is recommended:

℞.—Creasote . . . . . gr. lx.
Powdered marshmallow root, Purified liquorice . . āā ʒjss.
Mucilage of gum arabic . . q. s.—M.
Div. pill. No. cxx. Coat with gelatine.
Sig.—One pill three times daily.

In irritative cough and diarrhœa the following is administered:

℞.—Creasote . . . . . gr. xxx.
Acetate of lead, Opium (pure) . . . āā gr. v.
Extract of liquorice . . . ʒjss.
Mucilage of gum arabic . . . q. s.—M.
Div. pill. No. 50.
Sig.—One pill three times daily

For children, creasote in the form of the following emulsion seems best adapted:

℞.—Creasote . . . . . gr. xx.
Dissolve in
Almond oil . . . . . ʒj.
Gum arabic . . . . . ʒv.
Water . . . . . ʒiij.—M.
Make an emulsion, and add,
Compound tincture of orange peel gtt. xv.
Oil sugar of peppermint . . ʒj.—M.
One teaspoonful two to five times daily.

For drop doses the author uses the following:

℞.—Creasote . . . . . gr. xlv.
Tincture of cinnamon . . . ʒj.—M.
Fifty drops, three times daily, in half a cup of warmed milk or warmed sweetened water, or Malaga wine, etc.—*Deutsche med. Wochenschrift*, December 20, 1888.

Tuberculosis a Specific Infectious Disease.—An interesting proof of the widespread acceptance of the view of the nature of tuberculosis first forcibly maintained by Villemin, and recently so strongly confirmed by Dr. Koch's discovery of a specific bacillus, is afforded by the fact that in the new edition of Fagge's *Medicine*, Dr. Pye-Smith has classified tuberculosis among "specific infectious diseases," between syphilis and pneumonia. One consequence of this general acceptance has been the growth of a more hopeful feeling with regard to the prognosis of tuberculosis.

Kurlow has conducted some experiments which have a direct bearing on the solution of this question. It is

well known that it is by no means uncommon to find *post-mortem* evidence of cured tuberculosis of the lungs. Twenty-six cases of apical affections of the lungs found at the necropsies of persons dying of some affections other than tuberculosis were tested with the following results: 1. Inoculations made with material obtained from three simple cirrhotic patches in the apices gave negative results. 2. Inoculations made with material obtained from four cirrhotic patches infiltrated with calcareous matter were likewise negative. 3. Inoculations made with material obtained from twelve capsulated caseous patches on twenty-six animals resulted in the development of tuberculosis in twenty of the animals. The experimental results show that in twenty-six suspected cases of tuberculosis of the pulmonary apices, seven only, twenty-seven per cent., were non-infectious.

Bollinger, in common with other observers has found that the milk of cows suffering from local or general tuberculosis may be infectious, but that the infective power is very greatly diminished by dilution. The meat that is to say the muscles, of tubercular cows was not, according to his experiments, infective.—*British Medical Journal*, December 29, 1888.

Pyrodin.[1]—DR. OSKAR LIEBREICH gives the following *résumé* of Dr. Dreschfeld's researches into the action of pyrodin:

1. Pyrodin is a powerful antipyretic.
2. It lowers the temperature very rapidly, the same remaining low for several hours.
3. It is easily administered. It incites skin activity, but no nausea, vomiting, or collapse.
4. Its beneficial action is especially well demonstrated in pneumonia, scarlet fever, and petechial typhus.
5. It is less beneficial in typhoid fever.
6. It acts favorably in migraine and neuralgia, though the number of observations made thus far do not admit of any positive assertion.
7. It should only be administered once in eighteen or twenty-four hours, and only for a few days at a time.
8. It has acted in cases in which other antipyretics failed.
9. The dose for children is from two to four grains; for adults, from eight to fifteen grains.
10. In its action it is more powerful than antipyrin, and antifebrin, being at the same time more toxic than these preparations. This last disadvantage is overcome by the fact that it need not be given more than once in eighteen or twenty-four hours, as its antipyretic effects last longer than those of any other preparation.[2]
11. It lowers the pulse as well as the temperature, and frequently produces diuresis.—*Therapeutische Monatshefte*, December, 1888.

The Lancet, of December 29, 1888, has the following: "Great caution, however, is required in its administration, as it is apt to produce jaundice, followed by anæmia, and even more serious symptoms due to hæmoglobinæmia. Small doses only should be given, and at sufficiently long intervals to enable one to watch any toxic effects."

[1] Pyrodin contains as its active agent *acetylphenylhydrazin* ($C_6H_5N_2H_1C_2H_3O$) a crystalline powder, very sparingly soluble in water.

[2] Later investigations have led Dr. Dreschfeld to conclude that the toxic effects of pyrodin must be well guarded against.

Treatment of Facial Eczema in Children.—DR. E. BESNIER distinguishes three distinct varieties of infantile facial eczema: eczema of lymphatic or scrofulous origin, pruriginous eczema of dentition, and desquamative eczema.

I. *Scrofulo-tuberculous eczema.*—This is treated with lotions of a teaspoonful of Van Swieten's liquor[1] to a bowl of warm water, gradually increasing the quantity of the mercurial liquid. The lotions to be followed by the application of the following ointment:

℞.—Vaseline . . . . . ℥j.
Calomel . . . . . 15 grains.

Which in turn is replaced by the following:

℞.—Vaseline . . . . . ℥ij.
Red precipitate . . . . 1 grain.

II. *Eczema of dentition.*—The dental irritation should be overcome by painting the gums with the following solution:

℞.—Cocaine . . . . . 1 grain.
Bromide of potassium . . 8 grains.
Water, Glycerine āā . . . ℥iss.

If necessary some bromide of potassium can be administered internally. After this the following ointment should be applied to the gums:

℞.—Oxide of zinc . . . . ℥iss.
Vaseline . . . . . ℥iv.—M.

III. *Pruriginous eczema.*—Should the eczema attack the scalp, the hair should be cut short and the scalp cleansed thoroughly with soap-lotions. In facial eczema the crusts should be softened with warm milk and water, and then the following ointment applied:

℞.—Resorcin . . . . . 8 grains.
Oxide of zinc . . . . ℥iss.
Vaseline . . . . . ℥iss.

Or,

℞.—Powdered sulphur . . . ℥iss.
Oxide of zinc . . . . ℥iij.
Vaseline . . . . . ℥iij

—*Revue Thérapeutique.*

Naphthol in the Treatment of Itch.—DR. KAPOSI recommends the following formula:

℞.—Naphthol . . . . . gr. l.
Green soap . . . . . ℥vj.
Prepared chalk . . . . . ℥jss.
Lard . . . . . ℥j ℥ij.—M.

Apply once a day.

The substitution of lanoline for lard will admit of deeper penetration of the ointment.—*Revue de Thérapeutique*, December 27, 1888.

Sublimate Solutions in Cystitis.—DR. LINDÉN (*Finska läkaresällskapets handl.*, No. 29) recommends injections of sublimate solutions 1:75,000 to 1:50,000 in cystitis.—*Deutsche med. Wochenschrift*, December 20, 1888.

[1] The formula for Van Swieten's liquor is as follows:

℞.—Bichloride of mercury . . . . 5 grains.
Water . . . . . ℥j.
Alcohol (80 per cent.) . . . . ℥j.

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THE REPOSITION AND PRESERVATION OF BONE-GRAFTS.

As is well known, after removal of portions of the skull by trephining or otherwise in time the gap will become occluded by a laminated fibrous substance, whilst those portions of the membrane which are near to the edges of the opening, after the lapse of several months, and more especially in the young, will frequently be found more or less ossified. This membrane is usually ample protection for the cranial contents if the amount of bone removed is not large; but after exsecting so great an area as is sometimes necessary for purposes of exploration or removal of growths or of shattered or depressed fragments, the simple fibrous wall does not afford sufficient protection.

To obviate this, as long ago as 1868 Ollier recommended what he termed "subperiosteal" trephining—that is, the preliminary raising of the periosteum and its careful reposition after removal of the disk or fragments, and thus he was enabled frequently to secure bony occlusion of the trephine opening. Shortly afterward he further proposed the now revived procedure of replacing the entire button or fragments, but after experimenting several times and, in the absence of antiseptics, lamentably failing, he was led to condemn the measure.

Three years ago Macewen, at the time of performing some of his wonderful brain operations, was led to repeat Ollier's experiments, and, with the aid of antisepsis, was as brilliantly successful as Ollier had been unfortunate. He operated by the subperiosteal method, broke the disks into small grafts and planted them upon the dura mater, and then replaced the pericranium. A year later Horsley recommended that the button or other fragments be replaced entire, regardless as to what their size might be. These are now recognized procedures in many cases, but the query arises as to what are the conditions under which replacement, partial or entire, is indicated.

Reposition is indicated where the amount of bone removed is large and in which the wound can subsequently be kept aseptic. Where purulent drainage is expected, either the grafts should not be replaced, or we should be prepared again to remove them upon the first sign of trouble indicating that they had perished and become dangerous foreign bodies in the wound. Buttons or grafts from such palpably septic operations as those upon suppurating mastoid cells or abscesses resultant therefrom should never under any circumstances be replaced.

Again, the mode of replacement of the graft is of importance, for the exact replacement of a tightly fitting graft will effectually prevent drainage, which latter, when indicated, is as important in brain as in abdominal surgery. Therefore, if the button be in one piece it must be notched or broken before replacement, that an ample exit for the catgut or rubber drain may be provided.

The means of preserving grafts from the time when removed until wanted for replacement is another question of great importance. This has hitherto been more or less effectually accomplished by placing them in hot antiseptic solutions, but we have gained best results by simply wrapping the fragments in a few layers of moist aseptic gauze, and placing the whole in a covered dish until wanted. This method could be improved upon by having the fragments wrapped as above and deposited in a jar, dish, or saucer floating upon water maintained at a temperature of 100°–110° in a covered vessel. The proposal of Dr. Dercum, of this city, to place the grafts in sterilized blood serum kept at 100° is logical, but presents great practical difficulties, and could not yield better results than does the above-described method. On the other hand, it is not wise to preserve them in simple boiled water, nor in antiseptic solution, because of the devitalizing effects of those agents. What we require is simply asepsis, warmth, and moisture, and under these conditions the bony fragments will more than retain their vitality until the termination of even the most prolonged operation.

When the grafts are themselves septic—as in compound fractures—but the conditions indicating replacement are present, then, to insure asepsis, the risk of immersion in antiseptic solution must be taken, or clean fragments must be procured from a lower animal or elsewhere and used in their stead.

Our remarks apply equally to all grafts, whether taken from other situations or from animals.

THE APPLICATION OF EXTENSION IN POTT'S DISEASE AND VERTEBRAL INJURIES.

AT the clinic of the University Hospital, on Friday last, Dr. H. C. Wood showed and explained a method of treatment applicable to cases of Pott's disease and to fractures of the spinal column, which he believed to be novel, and which may, upon further trial, prove of great practical importance. Dr. Wood called the attention of the class to the fact that many years ago Prof. J. K. Mitchell treated the cases of Pott's disease by swinging from the head, and that the ordinary treatment by means of the plaster-jacket was an attempt to carry out the indication of extension of the vertebral column. The spinal-jacket, however, as ordinarily placed, fails to produce any continual increase of extension; it simply saves that which has been gained during the few minutes' suspension of the patient. The difficulty with Prof. Mitchell's plan of treatment lies in the fact that very few persons can be found whose strength of neck and lack of general sensitiveness will allow them to be even partially suspended by the head for any length of time; and yet it is claimed that recently in the Orthopædic Hospital great good has been achieved in certain cases by a return to the old treatment with the J. K. Mitchell chair.

Dr. Wood stated that it had occurred to him that the spinal-jacket might be used for the purpose of extension. The chest of a well-shaped man is an inverted cone, and any upward strain upon the jacket would naturally be received, not upon any one point, but upon numerous points upon the surface of the wall.

Dr. Wood, therefore, had a jacket made with loops, from which the patient could be suspended. The making of the loops is very simple: after the first layer of the jacket is put on, a strong linen bandage is placed at the lateral lower edge anteriorly, and then carried directly up, loosely, over the shoulders, and down again to a similar position on the posterior edge of the jacket. The bandage is then reversed, and carried upward and forward and returned until three or four turns of the bandage are loose over the shoulders. The same is done down the other side of the jacket, and then the exterior layers of the jacket are put around the two bandages, up to the top of the jacket. When the whole mass is hardened the linen bandages are so thoroughly incorporated with the jacket that they cannot be pulled out, except by the destruction of the jacket; and above the shoulders they afford a loop to which can be attached a cord or any other device for the purpose of suspension.

At the trial in the clinic, a man with Pott's disease in the lower dorsal region, upon whom the jacket had been placed, was partially suspended in a sitting position. The force of extension, as accurately measured, was seventy-five pounds, and was steadily maintained for four hours without interference with the circulation, without straining the arms, or in any way causing suffering. At the end of the time the patient said he felt more comfortable than before he had been swung.

Dr. Wood also suggested the use of the method in fractures of the spinal column, stating that not only could the patient be suspended for hours, but by securing the loop in the jacket to the head of the bed, and raising the latter at an angle, the weight of the lower segments of the patient's body could be used to extend the spinal column, even during sleep. The force of the extension, of course, could be varied according to the necessities of the case, by lowering or lifting the head of the body. In putting on the jacket a coating of cotton batting should be put between it and the undershirt of the patient.

Since the clinic the case of Pott's disease has been daily suspended for some hours; and he now affirms that not only is he more comfortable in the jacket, but he is now able to move much more freely his left leg, which had been almost completely paralyzed; he can, indeed, lying in bed raise it up and cross it over its fellow.

If future experience should confirm the use of the plaster-jacket, it is evident that by means of a little ingenuity with the wheel-crutch and baby-jumpers much can be gained in the treatment of vertebral caries and vertebral traumatisms.

DR. GEORGE A. BODAMER, of the German Hospital, of Philadelphia, presented on Monday evening, before the German Medical Society of Philadelphia, a case of a young man suffering from a swelling of

the right side of the head and neck, with necrosis of bone, and demonstrated in the discharge from a fistulous opening in the temporal region the presence in enormous quantities of the radiating fungus known as actinomyces. Dr. Bodamer diagnosed the case as one of actinomycosis, and stated that, as far as he knew, it was the first case on record in this country. The details of the case he will publish later. A demonstration of the case was made at Dr. Deaver's clinic at the German Hospital, and the observation was corroborated by Dr. Formad in his morbid anatomy demonstration at the University of Pennsylvania on the following day.

The College and Clinical Record, in its current issue, excuses itself for copying, without credit, an article from our columns and publishing it three months afterward as an *original* article of its own, on the ground that the paper, having been read before a society, was not the exclusive property of any periodical. The article in question was published exclusively in our columns under arrangement with its author, who was duly paid for it, and our ownership of it is fully protected by copyright. Even if this were not so, our contemporary was scarcely more just to its own readers, in giving them as "original" an article which had been published in another journal three months before, than it was to us in copying the article from us without any acknowledgment of the source from which it was taken.

DR. A. L. LOOMIS has been elected President of the New York Academy of Medicine.

THE Chair of Materia Medica and Therapeutics at the Niagara University has been filled by the appointment of Dr. Albert E. Persons, of Buffalo. This is the Chair recently made vacant by the decease of that brilliant young teacher and author, Dr. Frederick R. Campbell.

M. PASTEUR has resigned the Secretaryship of the Académie des Sciences on account of ill-health.

THE Royal College of Surgeons of England, by a vote of 21 to 2, has passed a resolution, censuring Sir Morell Mackenzie for publishing his work on the case of the late Emperor Frederick.

DR. VON LAUER, Physician-in-chief to the German Army and physician to the late Emperor William, celebrated, on December 18, 1888, his sixtieth year of service in the army. Congratulations were received from the Imperial family, the ministers, the faculties of all the medical colleges, the army medical staff, and many others. On December 14th a dinner and festival were given by the students of the Frederic-William Institute in honor of the occasion. Dr. von Lauer is now in his eightieth year.

WITH the new year the Sacramento *Medical Times* changes its name to the *Occidental Medical Times*.

REVIEWS.

THE EAR AND ITS DISEASES: BEING A PRACTICAL CONTRIBUTION TO THE STUDY OF OTOLOGY. By SAMUEL SEXTON, M.D., Aural Surgeon to the New York Eye and Ear Infirmary; Fellow of the American Otological Society, etc. Edited by CHRISTOPHER J. COLLES, M.D., Assistant Aural Surgeon to the New York Eye and Ear Infirmary. With Numerous Original Illustrations. 8vo. pp. 401. New York: Wm. Wood & Co., 1888.

THE author has not attempted to present to the profession a treatise on the ear embracing the entire field of otology. In the labor of collecting and condensing his clinical notes of more than ten thousand cases, the author has been ably helped by his assistants in the Infirmary, Drs. Wm. A. Bartlett, Robert Barclay, and Christopher J. Colles.

In studying the functions and diseases of the ear, the author has aimed to avoid a too exclusive consideration of local conditions in the ear, as he holds that otology "in its broadest sense should embrace a consideration of the upper air tract, of which the middle ear forms but a part, and of regions contiguous to the ear."

The term "chronic catarrh" as applied generally to certain morbid processes in the ear, is not always used by the author, in speaking of diseases usually called by that name, because he does not believe that in every instance this term is fully descriptive of the conditions present.

The following topics have received very justly prominent consideration, viz., catarrh of the upper air tract; oral irritation, especially dentition in its effects on the ear; sea-bathing as causative of ear disease; wounds and injuries of the ear; rupture of the drum-membrane from boxing the ears, and its medico-legal aspects; and concussion from explosions and the discharge of heavy artillery. We also find that amomalies of audition, noises in the head or ears, and their connection with the hallucinations of the insane, have received careful attention in this work, as well as the effects of false hearing in singers, actors, lecturers, and musicians. Othæmatoma occurring among lunatics, pugilists, and others has been presented very fully, and will be of interest to scientists and examiners in lunacy.

The operation of excision of the membrana tympani and ossicles, for otorrhæa and for deafness due to chronic catarrh of the middle ear, receives elaborate attention; and the results of the author's experience with this valuable operation are given. We are informed that these

results have been satisfactory, and it is hoped that its usefulness will be confirmed by the experience of others. We feel that this operation, mainly through Dr. Sexton's efforts, has already become a valuable addition to the means the aurist can command for relieving his patients.

Other subjects which have received due attention in this work are: the classification and education of school children with defective hearing; the effect of high atmospheric pressure on the ear in tunnels, caissons, and in diving; and the condition of soldiers, sailors, and marines seeking pensions on account of disability from deafness. Dr. Sexton has given to the profession a most interesting and valuable guide in the field of otology, which, from the perusal of this book, we are forced to conclude has become a wide one.

SOCIETY PROCEEDINGS.

THE GYNECOLOGICAL SOCIETY OF CHICAGO.

Stated Meeting, November 16, 1888.

THE PRESIDENT, CHARLES T. PARKES, M.D., IN THE CHAIR.

DR. A. REEVES JACKSON read a paper on

SOME UNCURED CASES OF UTERINE HEMORRHAGE.

CASE I.—Mrs. F. W. first consulted him July 7, 1884. She was twenty-eight years old, and had been married two and a half years; no pregnancy. Menstruation commenced at the age of sixteen, and had always been regular and in every way normal down to the time of marriage. After that event, a period occurred at proper time. The patient then missed two periods. After lifting a heavy weight, a flow of blood appeared and continued for several weeks. She visited Dr. Goodell, of Philadelphia, who curetted the uterus in May, 1883. He did not know what, or whether anything, was removed, but the patient considered herself well for four months. In the following autumn, two periods were again missed. After a trifling misstep a red flow began, and continued about one-half of the time for nine months; then he saw her. She was a large but not tall woman, weighing one hundred and sixty-two pounds, of dark and rather dull complexion, and habitually despondent temperament. There was no history or present evidences of disease of important thoracic or abdominal organs. The pelvic viscera were found to be entirely normal in size and position. The os uteri was rather small, but of virginal shape, and free from redness or erosion.

On July 9th he administered ether, and curetted the uterine cavity. A few fungous granulations were removed, and an application made of Churchill's iodine solution. This latter was repeated every four to seven days. For about three months menstruation appeared at intervals of four or five weeks, rather profusely, and lasting from seven to ten days. Then the interhemorrhagic periods became shorter—about three weeks. During the spring of 1885, the intervals were about two weeks; once, only nine days intervened. In the early part of 1886, the flow was more irregular, recurring every three to six weeks. In July, however, it appeared after an interval of two weeks, and lasted three weeks, not profusely but constantly. In August following, he again used the curette, without any result. Nothing was removed, and no change was produced in the symptoms. In June, 1887, the same operation was followed by a like negative result. A month later his connection with the case ceased.

During the time of his attendance (which was not continuous, but interrupted sometimes for periods of several months) the treatment consisted in efforts to overcome habitual constipation, and the intra-uterine application of iodine, carbolic acid, a solution of ferric alum, etc, These applications were always preceded by the introduction of a No. 12 bougie. There were two unfavorable conditions present in this case which he could not obviate. The one was tight-waist dressing, and the other an insuperable objection to active exercise. Within the past few days the husband of this patient called upon him and stated that the subsequent history of his wife presented no material change; that, at times, she seemed better, and then became worse again. She is now under the care of another physician, and is thought to be improving.

CASE II.—Mrs. E. D. placed herself under his care January 22, 1885. She had been married three years, and was never pregnant. Menstruation began at twelve, had never been distinctly regular, and for many years was rather scanty. During the past year, however, the discharge had recurred with greater frequency than ever before, the interval being less than four weeks, and it had become shorter and shorter, while, at the same time, the quantity of discharge at each period had steadily increased. During the month immediately preceding his first interview with the patient there had been three attacks of flowing.

This patient was of medium height, and much too stout to be termed plump. She had very dark and abundant hair, and there was a marked growth of hair upon her upper lip, on her face from the temporal regions to the chin, and on her neck. Interrogation failed to elicit any evidence whatever of cardiac, pulmonary, hepatic, or renal disorder. The patient ate well, slept well, and felt well. She was only annoyed by the frequency of the bloody flow. A pelvic examination revealed no abnormal condition, position, or shape of any of the organs. The single disordered symptoms discoverable consisted in a discharge of dark blood which was seen slowly oozing from the os uteri. The introduction of the sound was easily accomplished, and was followed by a rather profuse flow of redder blood.

Two days later, under ether anæsthesia, the cervical canal was moderately dilated, and the interior of the uterus curetted. A small number of fungosities were removed and the uterine cavity swabbed with Churchill's iodine solution. On February 20th, a bloody discharge appeared, and continued more or less profusely until March 14th—three weeks. He then made an application of Monsel's solution of iron. The discharge ceased for two days; it then reappeared and lasted to March 23d—seven days. He again dilated the cervical canal and passed in a curette, without removing anything, and applied the iodine solution. There was no discharge for eight days subsequently. Then a flow which seemed like that of menstruation appeared. It lasted five days, ceased two days, reappeared and continued with occasional intervals of one or two days until April 23d, when

it became profuse and seemed like menstruation again. After a few days the flow diminished, but a reddish-tinged oozing continued until a more profuse flow indicated the return of catamenial discharge. On November 9th, the patient reported that the longest time she had been free from bloody discharge was four days.

During all that time, he had availed himself of frequent opportunities of making local applications of iodine, carbolic acid, Monsel's solution, alum, fused nitrate of silver, etc. Also, he had given quinine, ergot, and viburnum, and on several occasions he had gently dilated the cervical canal, and tried to get away something with the dull curette.

No especial change was noticed in the symptoms in the summer of 1886, during which time all treatment was suspended. In January, 1887, the patient informed him that once only she was free from hemorrhage for a period of three weeks. Treatment was then resumed. He introduced a tupelo tent and followed the dilatation by a very thorough application of iodized phenol. This was repeated at intervals of five to seven days for several weeks. There was no improvement. Then, he tried nitrate of silver for a while, but the hemorrhage continued. In the summer of 1887, the patient went to Europe with her husband, and for a few weeks while there she was somewhat better. In the following autumn, however, after her return, the hemorrhage was as constant as before. On December 23d, he dilated the uterine canal mechanically under anæsthesia, and removed two large granulations. She died one week later of peritonitis.

CASE III.—Mrs. W. L., aged thirty-five years, had been married seven years, and had two children, the younger being sixteen months old. He saw her on September 5, 1885. When the baby was ten months old, menstruation appeared, and for two periods was quite normal, lasting four days. The third came a week too soon and lasted two weeks. After an interval of two weeks it again appeared, and when it had persisted ten days, necessitating two or more napkins daily, she applied for relief. She then showed effects of the loss in pallor, impaired strength, and enfeebled digestion. The baby was weaned, and the patient took strychnia, quinine, and arsenic. He found no pelvic cause for the hemorrhage unless it might have been a slight degree of subinvolution.

The uterus was freely movable, in normal position, free from erosion, and there was no swelling or undue tenderness in the region of the ovaries, tubes, or broad ligaments. Constipation was present, and he prescribed salines and a regulated nutritious diet. Subsequently, the hemorrhage continuing more or less constantly, although not profusely, other means were tried, many of them rather empirically. They included ergot, hydrastis, viburnum—all without perceptible effect. Then he dilated the cervical canal and explored the interior of the uterus with finger and curette. Nothing was found.

After about eight months, the patient placed herself under the care of an electrician, who treated her for nearly six months. Then she went to Cincinnati, and remained several months under the care of a distinguished gynecologist. She returned to him in January last, and stated that she had not at any time been more than ten days without a bloody discharge, and rarely more than three days. The menstrual periods were distinguishable by the more profuse flow which marked their presence, and they were fairly regular.

Once more he dilated the cervix under etherization, and drew a curette over every part of the intra-uterine surface, taking especial care to get the instrument into the cornual depressions. No tissue was brought away, and very little blood. He subsequently made internal applications of tinct. iodine, tannin, Monsel's solution, and once, at the close of what seemed to be a menstrual period, he applied nitric acid. While, at times, there was a diminution of the discharge, the improvement was only temporary, and in July last she again passed from his care.

CASE IV.—M. M., a single woman, aged twenty-five years, was born in Canada. Menstruation commenced at twelve, and was quite regular until she was nineteen; then the flow became prolonged, lasting sometimes five or six weeks. This was followed by irregularity, both in quantity and times of recurrence for a few months, when menorrhagia again appeared. At the age of twenty-two she was examined by a physician at Ottawa, who curetted the uterus, with what immediate result is not known, but the patient was free from all sanguineous discharge during a period of three months. Menstruation then returned and was regular, and in every respect normal for the following four months. Becoming menorrhagic again the curetting was repeated, with the same temporarily beneficial results as before. Again, after a few months, the flow became profuse, and a third curetting was made six months after the second, the latter time without apparent benefit.

The patient removed to Chicago, and came under the care of Dr. Stowell, with whom he saw her in the early part of the current year. On January 21st, after thorough dilatation of the uterine canal, he curetted very carefully, removing a small number of granulations. The operation was followed by the application of Churchill's iodine. For two months subsequently there was no bloody discharge. Then it reappeared, and Dr. Stowell has continued to treat the symptom in a routine manner locally and generally, but without satisfactory result. Latterly this case presents a curious feature: the flow is very profuse every alternate month, and normal the other.

Within the past fortnight this patient has been placed under the use of electricity, in the hope that she may be benefited by that remedy.

It will be observed that in the foregoing cases there were some features common to them all. Thus, in none of them did the hemorrhage take the form of rapid, profuse flow suddenly exhausting the patient, as we not infrequently notice in cases in which the discharge depends upon an abortion, or upon the presence of cancer or fibroid neoplasm. On the contrary, the evil effects produced were the result rather of the persistence of the discharge covering long periods of time. Again, in none of them was there evidence of disease of the lungs, heart, liver, kidneys, or other important organs causing a depraved condition of the blood or pelvic plethora. In none of them was there a history of hematocele, pelvic inflammation, or detectable pelvic swelling. In none of them was there any displacement or flexion of the uterus, or dislocation of the ovary. Indeed, in none of them could he determine a sufficient local or systemic cause. He had thought that possibly some such cause might

exist in disordered condition of the Fallopian tubes or pelvic cellular tissue not ascertainable by our present known methods of investigation.

Being aware of the influence of malarial poison in producing congestion of the abdominal and pelvic viscera, including perhaps the mucous membranes, he had not failed to take this possible etiological factor into consideration, and to make careful inquiry with the view of ascertaining its existence. The result in each case was wholly negative.

His object in reporting these cases was twofold: first, to ascertain whether others beside himself have met with similar baffling experiences; and, secondly, to obtain such practical hints in the treatment of such cases as may hereafter lessen the number in which we have to acknowledge defeat.

DR. D. T. NELSON thought that the only way we can arrive at a conclusion as to the nature of the disease, and, consequently, the proper method of treatment, is to follow them longer. One case that he had seen—and there is but one that seems to him at all like those reported—he was fortunate enough to see one or two years after a somewhat similar experience by other gentlemen, in which nothing was reported to have been found; in which there was curetting; but as he saw it subsequently there was plain evidence of fibroid tumor. Perhaps if these cases were seen longer or examined post mortem there would be a satisfactory explanation of the persistence of the hemorrhage. He thought that one of the small single or multiple fibroid tumors, which cannot be detected by the most skilful finger, or by any means of examination that we have at present, are likely to produce such results, and he believed that they may lie dormant for a longer period than these cases have been observed; he was quite sure that he had seen them—and eventually, perhaps of their own nature, develop so as to be found; perhaps from some exciting cause other than that.

There was another cause, he thought, for these hemorrhages, namely, disease of the Fallopian tubes. He did not mean by that a salpingitis that will fill the tube with pus or serum, and be so large as to be easily felt, but actual disease of the mucous membrane, perhaps not extending much deeper than the mucous membrane, but capable of producing a continuous hemorrhage. He was unable to point out a case in his experience, or in that of others, that is plain, but he simply threw it out as a hint, as a possible explanation, for further examination. Perhaps it is not a parallel case, and yet it seemed to him that there is a similar cause. A woman after menstruation, or a week after the cessation of the menstrual period, takes cold, has a slight cough, has a traumatism or some slight disturbance in the pelvis giving pain and other evidences of inflammation; we all know that one of the most common symptoms attending upon the pain, etc., is hemorrhage from the uterus. Not a severe one, perhaps, but a slight flow. It might be said, that means congestion of the whole pelvic viscera. True, it ordinarily does. But what does produce the uterine flow? Is it the uterus alone, is it the ovaries alone, is it the broad ligaments only, is it the Fallopian tubes and the uterus, is it the Fallopian tubes only? It seemed to him in some instances that it is only the uterus, not the broad ligaments and vascular structures about the uterus; but that the Fallopian tubes and ovaries have very much to do with this condition. He believed that if these cases were observed long enough, we should find a congestion of the uterus produced by a fibroma or sarcoma, or disease of the Fallopian tubes or ovaries, and preëxisting disease of the ovaries and tubes produces hyperæmia of the uterus that favors the development of fibroma and sarcoma.

DR. C. T. PARKES mentioned a report that he had recently read in one of the foreign journals that applied somewhat to this question. A case was reported where all these remedies were used; curetting and intra-uterine dilatation, and finally the surgeon concluded he would make an abdominal section. After making the section, he found what he reports as a cavernous angioma of one of the ovaries. It was removed and the case cured.

DR. A. REEVES JACKSON said that the cases which he had reported were not the only ones which he has failed to cure, but he had accurate notes of these, and he considered them sufficient for the purpose of bringing the matter before the Society.

The existence of fibroids, as a probable cause in some of these cases, as suggested by Dr. Nelson, had occurred to him. The question of possible pregnancy also arose, and he made such inquiries and investigations as he hoped would lead to a settlement of the latter point especially. We know that in fibroid growths of the uterus hemorrhage becomes by and by a prominent symptom, and usually it is the one which first calls the attention of the patient to her condition; and in these cases we usually have no trouble in the diagnosis where there is present either a polypus or a fibroid of sufficient size to alter the shape of the uterus or to be felt within the cavity of the organ. He could conceive how a very small fibroid, incapable of detection by ordinary methods and ordinarily skilled hands and fingers, might produce hemorrhage, but would it yield to the medical treatment of a fibroid? If it did not, we should hardly feel justified in making a laparotomy to discover the existence of a fibroid that presented no other evidence of its existence than hemorrhage. It is true that patients nowadays submit to laparotomy when they are urged to do so; yet the one who urges should have some kind of objective reason upon which to base his advice. In none of these cases could he detect any change whatever in the shape of the uterus. The fact is, that when we find a fibroid as the cause of hemorrhage, it is already surgical. It is large enough sometimes to have existed, with their slow rate of growth, for many years, and yet hemorrhage has probably not been present until the latest part of the history.

Disease of the Fallopian tubes, he had no doubt, is a frequent cause of persistent uterine hemorrhage. Primarily, the blood may have its source in the tube; later, by overaction—by the mere bleeding—there is produced manifest disease of the endometrium, as in the case last cited. But, granting this, inasmuch as we can only reach the uterine lining anyhow by our topical treatment, even if we have a suspicion that there may be tubal disease, it does not aid us in deciding what to do for it. The ethics of the condition are in doubt.

Allusion has been made to the death of the third patient. She died of peritonitis following the operation. He had reported it in order to call attention to the danger of what is usually considered a simple and safe operation. In this case, the operation was done under the strictest antiseptic precautions; every care was taken to avoid any danger from that source. Unfortunately, he was

obliged to leave the city shortly after the operation, leaving the patient in an unsatisfactory condition, temperature 102°, rapid pulse, red cheeks, and evident high constitutional excitement. On his return he found her still worse, and shortly afterward she died of peritonitis, whether septic or not he did not know. The dilatation was mechanical; it was not made by tents, which he considered a dangerous method of treatment.

He did not mention in the paper an important fact in the subsequent history of the last case. It was this: During the last examination he detected a distinct swelling at the side of the uterus, apparently in the Fallopian tube. Then he suggested that if the patient did not get better, here was a reason why we might properly make a laparotomy—not for the hemorrhage, but for the swelling which was possibly the cause of it. The curetting on three occasions certainly had a very satisfactory effect. On one occasion, for four months subsequent to the operation the patient had no bloody discharge whatever, natural or unnatural, which would seem to indicate that, at that time at least, the cause of the hemorrhage was in the uterus, and that the effect of the remedies applied more thoroughly after the dilatation had a controlling influence for a long time. This is very satisfactory to a patient who has been having a profuse or prolonged hemorrhage. This patient was under the care of excellent men in Canada, who, so far as he knew, never detected any swelling, and he inferred from this fact that the latter symptoms were of comparatively recent appearance.

The nitric acid, which he applied in one case, he formerly used a great deal more than he did now. His method of using it is that recommended by Athill some years ago. The uterus is previously dilated, and when sufficiently open, the pure nitric acid is passed into the uterine cavity on an ordinary cotton-wrapped applicator. He placed the patient on her back, introduced a perineal depressor, seized the anterior lip of the uterus, drew the organ down, and surrounded it entirely with cotton which has been dipped in a solution of bicarbonate of soda. The applicator is dipped into the acid, passed into the uterine cavity, and held there for a few minutes. It is then withdrawn and the vagina syringed until all fuming ceases. Then he removed the tampons from about the cervix, and another tampon saturated in glycerine is placed over the os uteri. Such was the method used in this case. The nitrate of silver he applied in this way: A few grains of the crystal are melted in the bottom of a test tube. A silver uterine probe is dipped into the fluid and withdrawn a few times, until a bead is formed on the end of the instrument the size of a grain of rice. This is passed through a speculum up into the interior of the uterus, and held there for a few minutes, and slowly drawn out so as to come in contact with the surrounding membrane. This method has been recommended as very effective in chronic cases of menorrhagia. The hydrastis he has used a good deal. Loewenthal has reported several cases in which he has used hydrastis for preventing menstruation absolutely in persons to whom it was injurious; chlorotic and anæmic patients, he affirms, have been effectually cured by the use of hydrastis, given so as to obliterate absolutely the function of menstruation. He has never used it for this purpose, but he believes in the principle. He did not believe menstruation, of itself, does any woman any good.

As to the relative frequency of inflammation before and after the advent of antiseptics, he was hardly prepared to answer. If the theory of septic inflammation is correct, all diseases resulting from the ordinary operations ought to be less, if antiseptic precautions are used. He remembered but three cases of ordinary operations in which death followed. Inflammation was present in all of them, and it may have been of a septic character, and so may it have been in this last case which he related. But the patient complained of pain immediately after the operation, and she was never free from pain until the time of her death, six days later.

Ergot he has not found to be beneficial in any condition of the uterus involving hemorrhage, unless it be subinvolution during its soft stage where the uterus is large and heavy. In those cases he believes ergot is an excellent remedy. That condition was not present in any of these cases. Whether in one of them the cessation of menstruation for two months indicated pregnancy, he did not know, but there was no other evidence of it; there was no fœtus observed; nor was the history that of an early abortion, so that the single symptom of absent menstruation in a woman who was irregular at times was not so significant as it might be under other circumstances.

In the case stated by Dr. Parkes, the disease of the ovary was found, as he understood, after all other theories and much treatment had been exhausted, and it was supposed that there *might* be some disease *somewhere* in the pelvis which could only be detected and possibly removed by laparotomy. But it is doubtful whether this would be a safe rule to follow even when all technical means and all known remedies for persistent hemorrhage have failed; if the woman is not endangered by the hemorrhage would it be right to subject her to any risk of her life for a *possible* cure? If life were jeopardized, there could, of course, be no question as to the propriety of laparotomy. This, however, was not the condition in any of the cases which he had related.

DR. EDWARD B. WESTON read a paper on

A NEW PROCEDURE IN CASES OF ANTICIPATED COMPLETE RUPTURE OF THE PERINEUM.

On the 4th day of October he was, for the fourth time, called to attend Mrs. H. in labor. She is a woman somewhat below the average size, and has rather a narrow pelvis, while her children are all large at birth. At the birth of her first child, a boy who weighed twelve pounds, she received a complete laceration of the perineum. The second child, also a boy, weighed nine and a half pounds, and the perineum was torn to the anal sphincter. The third pregnancy was terminated in the sixth month by unknown cause. The child was, of course, small, but delivery took place very rapidly, and there was again a rupture, though not to the same degree as in the second labor. On visiting the patient at the beginning of her last labor, an examination showed a well-restored perineum, and a child seemingly very large presenting in the first position.

Meditating over the situation, remembering what had taken place in her previous labors, he feared a complete rupture would again occur, however well he might apply the various methods or procedures for protecting the perineum. The thought came to him that it would be well to introduce a deep suture before the laceration occurred, and before the head began to press upon the

perineum, so that if complete rupture did take place he should have one suture already in place, by means of which he could easily bring the parts into accurate apposition, and which could in a measure be used as forceps or tenaculum, and be of great service in whatever after-operation might be necessary. He could see no objection to the step; so with a long curved needle he introduced a silk suture a little more than half an inch to the right of the anus, and carried it up about an inch and a half in the recto-vaginal septum, and brought it out on the left side at a point corresponding to its point of entrance. He left either end six inches long and tied them together. Again there was a laceration, though not a complete one. The child, a boy, weighed eleven pounds.

He then considered the objection which would be raised to the procedure. One objection will be that we cannot tell when we are to have a complete rupture. We cannot always know in advance, and here the unexpected often happens. But in some cases we feel very sure it will occur, and it is in these cases that the stitch should be introduced. And in cases of doubt the stitch had better be placed, as it will in any event do no harm. Another objection may be that, if rupture should take place, we cannot tell what direction it will take. In the great majority of cases, externally, the laceration occurs, practically, in the median line. So that whatever its internal course may be, all the advantages claimed for the stitch will be obtained. Again, that should the procedure be recognized as proper in certain rare cases, it will be abused by too frequent use. And that, with the stitch in place and with confidence in the future assistance to be derived from it, our vigilance in protecting the perineum might be relaxed. To these objections he could only say that the conscientious accoucheur would not be influenced by them.

Some will suggest the danger of sepsis. He did not believe this need be feared. If antiseptic precautions have been observed, and the stitch buried in the tissues through its whole length, the increased danger will be nil. If, fortunately, rupture does not occur, the stitch can be cut short at one side, withdrawn, and no injury will have been done. Others will say that, even should complete rupture take place, the physician should be skilful enough to repair it by some one of the old methods. This is true; but the fact remains that there are all degrees of surgical skill, ranging from no skill to that of the highest degree. It may also be said that the obstetrician who would introduce the stitch before laceration occurred would be the very one who would have least need of it afterward. He granted this. But the majority would prefer to have the stitch in place, rather than to begin repairs without it, the parts being not only lacerated, but often so contused, swollen, or retracted that their normal relations can scarcely be made out.

If, by the procedure suggested, some one may be enabled to repair a complete laceration of the perineum, which otherwise would be left for a gynecologist to repair after the patient had suffered, mentally as well as physically, for weeks or months, he thought it should be objected to. And however expert an operator may be, it is true that the easiest, simplest way of obtaining a desired result from operative procedure is the best way.

These were the chief objections which have occurred to him as likely to be raised. The advantages of the procedure have already been sufficiently indicated.

DR. H. P. NEWMAN suggested as a substitute for this manner of procedure one that has been long in use, namely, episiotomy, or bilateral incision of the vulva. It has served him well in one or two instances. It has this obvious advantage, that it allows of tearing laterally in such a way as not to injure the perineal muscles, or weaken the recto-vaginal wall. In this way he can also prevent complete laceration, where some tearing is inevitable. He should regard Dr. Weston's method as a most admirable means of placing the initiatory stitch, where rupture seems imminent, although he could not see how it could well obviate the tear.

DR. E. W. SAWYER desired to say in connection with making the slight lateral incision, or episiotomy, that it does often prevent the laceration from occurring in the median line. He has made these incisions, one on either side, in nearly every forceps case in primiparæ, and he never saw the least harm come from it. In some instances, when he thought the perineum would be extensively torn, the laceration was really very short and insignificant. He thought the suggestion of Dr. Weston is most excellent; it is in exemplification of the old axiom that a stitch in time saves nine, and he having attempted to repair an entirely lacerated perineum more than once immediately after parturition, knew something of the difficulty of introducing a deep, properly applied suture, and if he could have the first suture introduced when the parts were in their normal relations, he should consider that he had overcome the greatest obstacle in immediate repair. He did not see one objection to the introduction of the suture.

DR. JACKSON thought that the suggestion made by Dr. Newman was not a very new one. The two incisions should not be lateral but diagonal, so as to pass about one-half inch on either side of the fourchette directly outward, going beyond the rectum on either side. He had never used it, but it seemed to him that in a case where complete laceration seemed inevitable it would certainly be a preferable procedure to allowing the perineum to rupture. He did not understand Dr. Weston to say that the stitch recommended by him would prevent the laceration, but that it would aid in its repair, and from this point of view he regarded the suggestion as a very valuable one. It would certainly simplify the primary operation for rupture of the perineum.

DR. E. B. WESTON said that this stitch was not suggested as a preventive, but simply as an aid, in case a laceration should take place after all we had done, whether by episiotomy or any other method which we could think of, in bringing the parts together.

CORRESPONDENCE.

THE HEALTH OF ST. AUGUSTINE.

To the Editor of THE MEDICAL NEWS,

SIR: Rumor of prevailing sickness in St. Augustine makes the following statement of interest.

Continued effort toward sanitary improvement since the outbreak of epidemic yellow fever in Key West, in the spring of 1887, increased by the nearer approach during the past summer, has shown definite results, not only in external appearances, but in a reduction of death-rate and absence of disease dependent upon vitiated air.

From August 11, 1888, until the frost of December

20th (temperature 29°, official), this city was guarded by a cordon of 210 men by land, and 25 by water approach, under discipline of military strictness. In September dengue fever made its appearance. Its return in this month, or in October, is common, and excited no concern. Absent physicians were instructed by the Board of Health that their services were not required. Dengue is regarded with no more gravity than a common cold at the North; few called their physicians, and all recovered within the usual two or three days.

The fact that no death occurred from dengue fever, and that the disease disappeared spontaneously before the middle of October, sufficiently disproves any opinion that this may have been the dreaded enemy. There has not been a case of fever of any kind in November or December, to my knowledge, and I am not aware of one at the present time. Among the officers and troops, and their families, the records indicate no sickness. The city register of deaths shows the number to have been, in August, 13; September, 10; October, 9; November, 10; December, 11; January, to date, 1; only 5 out of the 54 being the result of climatic causes, viz., 2 typho-malaria, 1 dysentery, 1 diarrhœa, and 1 continued fever.

Very respectfully yours,

FRANK F. SMITH, M.D.

ST. AUGUSTINE, FLORIDA, January 8, 1889.

NEWS ITEMS.

The Prevention of Puerperal Fever.—For the purpose of preventing puerperal fever, as well as other infectious diseases of childbed, the following rules, to be added to those found in the *Manual of Midwifery for Prussian Midwives*, have just been promulgated by the Minister of Education, under date of November 22, 1888.

1. The midwife must pay the greatest attention to cleanliness; this cleanliness is to be especially observed during delivery and in attending the mother in childbed.

2. While attending to her duties the midwife is only to wear dresses the sleeves of which will admit of being rolled up to the arm. The dress itself must be covered with a broad, white apron, covering the bosom, and made from a light, and washable material.

The apron which has been worn by the midwife during her first examination of a woman in labor, or while attending to a woman in childbed, is not to be used immediately after the last washing, but is to be separated and laid aside from the rest of the midwife's wearing apparel.

3. Before going to a confinement, or to a woman in childbed, the midwife will see that her finger-nails are cut short and round, and the edges are smooth; she must remove the dirt from her nails, and ungual folds as well as from any possible cutaneous fissures of her hands, and wash her hands and forearms thoroughly, for which process she is to use her own soap and hand- and nail-brush.

4. Besides the articles mentioned in § 96, abstr. 1 of the *Manual of Midwifery*, a midwife will carry the following articles:

a. A clean apron of a light, washable material (one which has not been used since last washed), which must cover the entire front of her dress.

b. Soap to clean hands and arms.

c. A clean nail- and hand-brush (her own property) for the same purpose.

d. A clean towel, which has not been used since it was last washed.

e. Three ounces of pure carbolic acid in fluid form, in a bottle, bearing the following inscription in clear type: *Caution! Carbolic acid! Dilute thoroughly; for external application only.*

An accompanying irrigator to hold two pints, to have the pint marks plainly visible, and to be supplied with a well-fitting rubber tubing, from one to one and a half yards long. The bottom of the irrigator to be flat, and it, as well as the necessary connecting tubes, to be made of glass.

5. The midwife is responsible for the cleanliness of her utensils, and for the safe-keeping of the carbolic acid, which latter must be inaccessible to any other person.

6. Vaginal examinations of a pregnant woman, or of a woman in labor or in childbed, must never be undertaken by a midwife unless with bare and thoroughly clean hands and forearms.

Before making an examination by which she comes in contact with the genitals of the woman examined, or with a possible wound in the region of these parts, the midwife must roll her sleeves up to her arm, and fasten them in such a manner that they cannot unroll, then thoroughly wash her hands and forearms in lukewarm water, using for this purpose her own soap, nail- and hand-brush, and dry her arms on a clean towel, which has previously not been used. The same mode of procedure holds good when examining the external genital organs or any adjacent parts, for the drying of which she is to use absorbent cotton or jute, but never a sponge.

Besides this, it shall be the duty of the midwife to see that in cases of confinement, circumstances permitting, the mother is supplied with clean linen, which has previously been warmed, as well as clean bed-linen during the period of confinement and throughout her childbed.

After these preliminaries the midwife is to thoroughly disinfect her hands and forearms with the carbolic acid solution, after which she may proceed to examine the pregnant woman, woman in labor, or in childbed.

7. Where the words "carbolic acid solution" are mentioned, reference is had to a solution which the midwife is to prepare in the following manner:

To every two pints of water she shall add one ounce of carbolic acid, and in such a manner that the acid, which is somewhat heavier than water, does not settle to the bottom of the dish, but is equally distributed. This is best attained by pouring the solution into a bottle and thoroughly shaking the same. If the mixture is prepared in an ordinary round dish, the acid is only to be added by degrees, stirring constantly while so doing. The acid is *never* to be directly poured into the irrigator, because the acid not being thoroughly diluted, might sink to the bottom of the receptacle, and when drawn off injure the part it is applied to, most severely.

8. Before the first examination of a woman in labor, the midwife is to prepare four pints of the carbolic acid solution. Of this she shall put so much into the irrigator, that the tubings, catheter, and umbilical scissors, which she has previouly laid therein, are entirely covered with the solution. If one of the instruments is utilized, it must, after having been used, be thoroughly washed with soap, dried, and be put back into the irrigator, and kept there until no longer needed. If the irrigator is to be used for injections or washing purposes, it will be necessary to put

the instruments and the carbolic acid solution into some other vessel.

The remainder of the solution—about three pints—is to be divided into two equal parts, and put into two vessels. One of these is to serve for the *first* disinfection of the hands and forearms of the midwife, the other for any subsequent cleansing of her arms and forearms after each and every examination of the mother, or any other doings which would bring her in contact with the generative organs, or with any wound adjacent to the same.

9. After labor, it shall be the duty of the midwife to wash the external genital organs with clean, lukewarm water (which has been thoroughly boiled), and to dry the same with a clean towel or absorbent cotton.

10. The midwife shall not wash out the vagina or give the mother any injections without a physician's permission, except in such cases as are mentioned in the *Manual* when she is to use the carbolic acid solution instead of water.

11. The midwife must avoid any unnecessary contact with the genitals of the lying-in woman, or with parts soiled with the lochia, or with any bad-smelling or purulent portion of the body (as ulcers, a dead fœtus, linen soiled with the lochia, etc.), and must avoid as much as possible all intercourse with persons suffering from any contagious disease, or any suspicious illness, as childbed-septicæmia, metritis, perimetritis, diphtheria, scarlet fever, smallpox, syphilis, chancre, gonorrhœa, typhoid and typhus fever, cholera, or dysentery.

12. Should the hands or instruments of the midwife have come in contact with the genitals of a lying-in woman, or with any article soiled with the lochia, she shall immediately cleanse her hands with soap, nail- and hand-brush, while her instruments must be cleansed and placed in the disinfecting solution for one hour, as before labor.

13. Should the lochia have a bad odor, or be purulent, or the midwife have come in contact with any article which has been in contact with these discharges, or should the person with whom the midwife has come in contact with her hands and instruments, be suffering from any of the diseases mentioned in § 11, the midwife shall follow out the rule laid down in § 12, and cleanse her hands and forearms for at least five minutes in the carbolic acid solution, and boil her instruments for one hour in water before placing them in the carbolic acid solution.

14. Should the midwife have been to the dwelling of a person suffering from any of the following diseases, or from any suspicious disease, as childbed-septicæmia, metritis, perimetritis, erysipelas, diphtheria, scarlet fever, smallpox, syphilis, chancre, gonorrhœa, typhoid and typhus fever, or dysentery, she must not examine a pregnant or lying-in woman, nor even call on her, before she has changed her wearing apparel, and has cleansed and disinfected herself as prescribed in § 13.

15. Should a person suffering from any of the diseases mentioned in § 14 live in the same dwelling with the midwife, or should a lying-in woman under the midwife's care have died of puerperal fever, metritis, or perimetritis, or be suffering, or have died from a suspicious illness, the midwife shall obtain all further orders from the district physician, and shall, until such are forthcoming, abstain from any further prosecution of her calling.

16. Should the midwife be nursing a lying-in woman suffering from puerperal fever, metritis, or perimetritis, or any other suspicious illness, she must not under any circumstances examine a pregnant woman; and a woman in labor, or a lying-in woman, only when another midwife is not to be had, and under such circumstances only after having bathed and cleansed her entire body in water and soap, and then disinfected and dressed herself in clean clothes, as laid down in § 14.

17. The wearing apparel which the midwife has worn at the examination of a person infected with any of the diseases mentioned in § 14, must not be brought in contact with her other wearing apparel, but must be thoroughly boiled, washed with soap, and disinfected with steam in a steam-disinfecting apparatus before being again used.

18. The midwife must never touch a corpse, or the clothing worn by a corpse. Should she, however, have done so, she must proceed as laid down in § 16.

Medical Royalties.—According to *Truth*, "Prince Louis Ferdinand, of Bavaria, who is married to the Infanta Paz, is a very clever surgeon, and at one of the hospitals in Madrid he recently operated on a woman who was suffering from cancer of the breast, with complete success. His relative, the Duke Charles Theodore, brother of the Empress of Austria, is both oculist and surgeon, and is very skilful; but his fondness for the knife is not appreciated at the Vienna and Munich hospitals, for whenever he operates all the regular arrangements are upset, the whole staff is required to be in attendance on him; he must always be respectfully addressed as "Your Royal Highness," and strict etiquette is observed, all of which is decidedly a nuisance. When the Duke is at Vienna, he often passes the whole day in the General Hospital, and if there are any arms or legs to be cut off, he hastens joyfully to the work. Duke Charles's zeal may possibly be moderated by his accession to the Bavarian estates of his father, Duke Max, who died the other day. He is married to a cousin of the King of Portugal."

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 8 TO JANUARY 14, 1889.

By direction of the President, ROBERT W. SHUFELDT, *Captain and Assistant Surgeon*, will report in person to Brigadier-General Wesley Merritt, President of the Army Retiring Board, at Fort Leavenworth, Kansas, for examination by the Board.—Par. 1, *S. O. 4, A. G. O., Washington*, January 5, 1889.

By direction of the Secretary of War, R. W. JOHNSON, *Captain and Assistant Surgeon*, is relieved from duty at the U. S. Military Academy, West Point, New York, and will report to the commanding officer, San Carlos, Arizona, for duty at that post.—Par. 10, *S. O. 7, A. G. O., Washington*, January 9, 1889.

JOHNSON, RICHARD W., *Captain and Assistant Surgeon* (U. S. Army).—Is granted leave of absence for fourteen days.—Par. 1, *S. O. 8, A. G. O., Washington*, January 10, 1889.

By direction of the Secretary of War, JAMES E. PILCHER, *Captain and Assistant Surgeon*, will repair from Fort Wood, New York Harbor, to Philadelphia, Pa., at such time as his services can be spared, for the purpose of giving instruction to the Hospital Corps of the First Brigade, National Guard of Pennsylvania.—Par. 6, *S. O. 8, A. G. O., Washington*, January 10, 1889.

HARRIS, HENRY S. T., *First Lieutenant and Assistant Surgeon* (U. S. Army).—Will, upon the arrival of Acting Assistant Surgeon Boyer, proceed from Camp Pena Colorado to the post of San Antonio, Texas, and report to the commanding officer, for temporary duty.—Par. 4, *S. O. 1, Headquarters Department of Texas, San Antonio, Texas*, January 2, 1889.